MEDICAL RECORD

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Vol. 161, No. 7

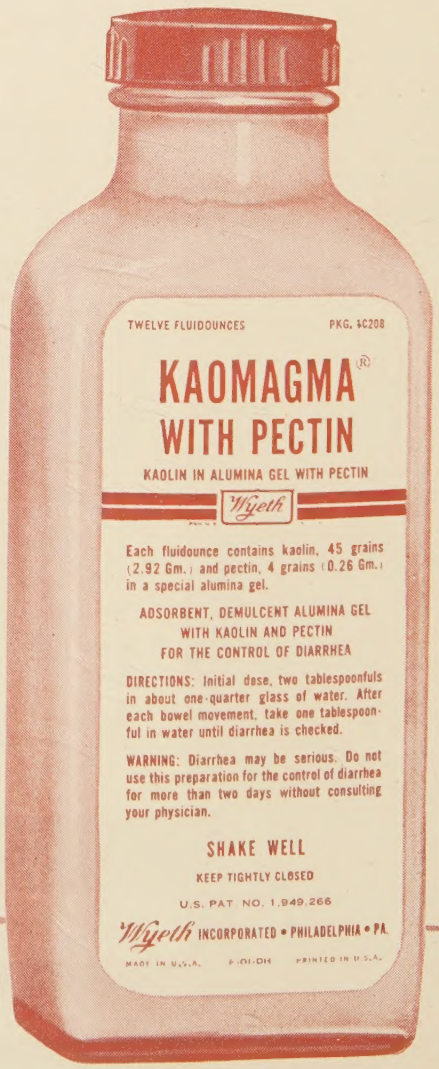
A New Product for Diarrhea based on Alumina

A practical and singularly effective alumina gel has been developed for its demulcent properties—to soothe and protect intestinal mucosa inflamed during diarrhea.

Other active ingredients are pectin and colloidal kaolin. Since the alumina gel is non-absorbable, it holds the kaolin and pectin in suspension—thereby increasing their effectiveness.

This unique product, Kaomagma with Pectin, quickly controls diarrhea—consolidates liquid stools, checks fluid loss, adsorbs bacteria and their toxins, and restores the patient's comfort.

It is free-flowing and has an entirely new taste especially acceptable to children.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WARNING: Diarrhea may be serious. Do not use this preparation for the control of diarrhea for more than two days without consulting your physician.
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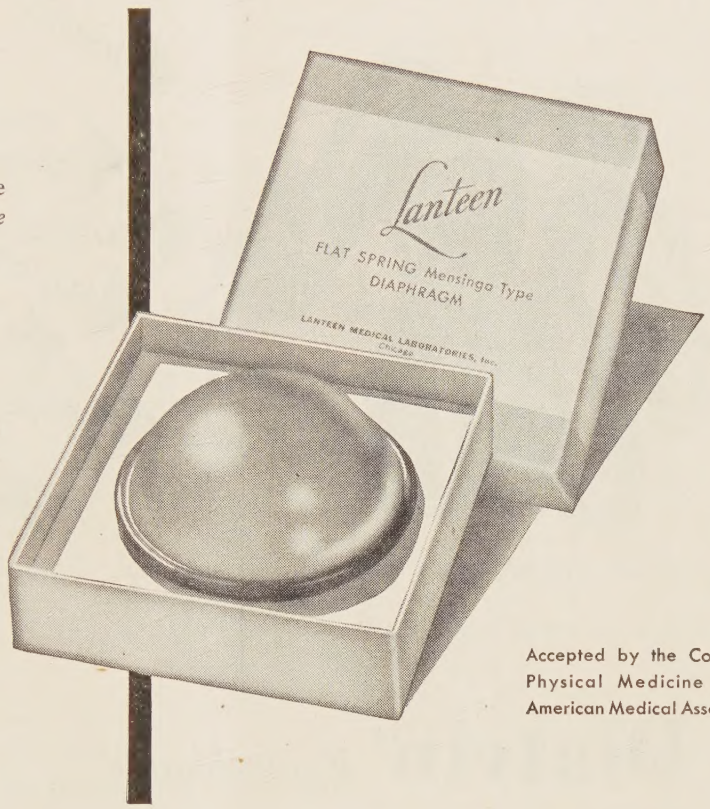

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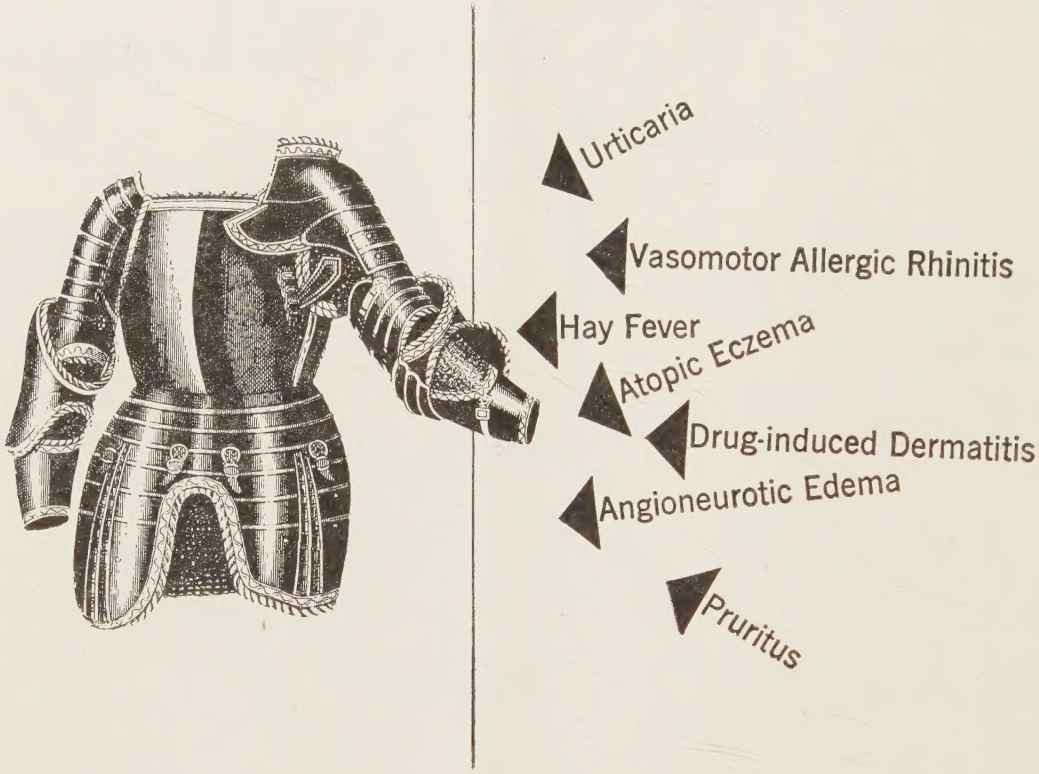

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AUGUST, 1948

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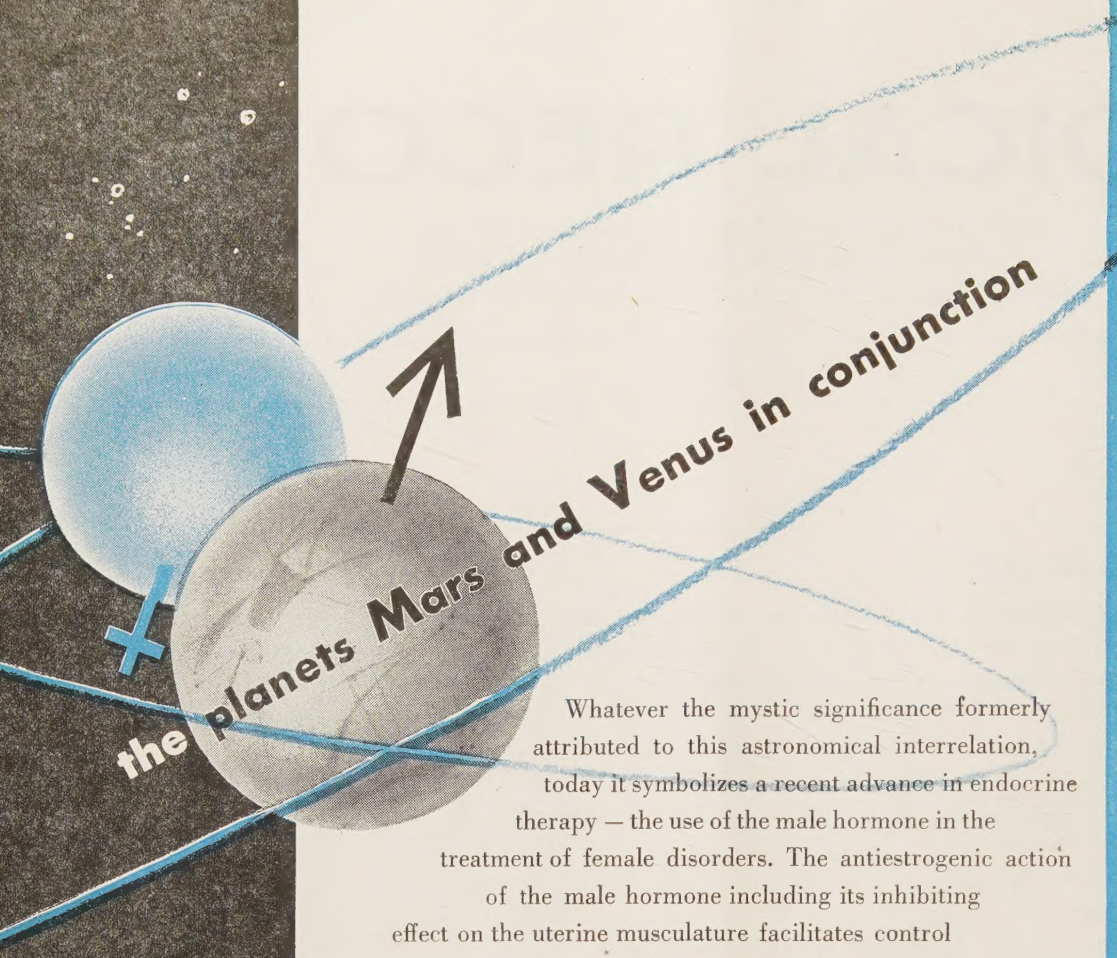

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Whatever the mystic significance formerly attributed to this astronomical interrelation, today it symbolizes a recent advance in endocrine therapy — the use of the male hormone in the treatment of female disorders. The antiestrogenic action of the male hormone including its inhibiting effect on the uterine musculature facilitates control of gynecologic disturbances.

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OUR COVER

"It's A Red Feather In Your Cap"

In ancient China, the "Hagoromo" was a robe of state, fashioned of carefully selected feathers dyed red. It could be worn only by distinguished public servants who had done something outstanding for the welfare of the community. Wearing of the robe was supposed to insure immortality to the wearer. A similar red-feather-cloak has been found among rare relics from the South Seas.

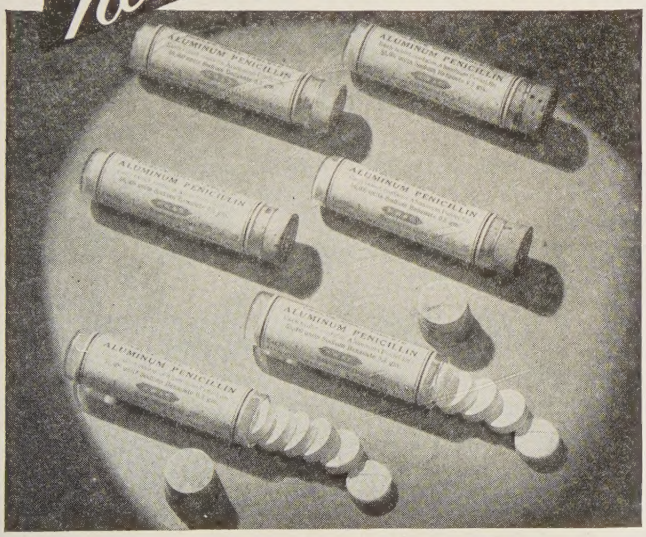
More ancient history reveals that a vermilion-dyed feather of India lore was used as a symbol of achievement. In order to win his place at the Council of Braves, whose duty and responsibility was to protect the whole tribe, each young buck had to prove his courage by capturing a feather from a live eagle with his bare hands. This feather was then dyed red, and the brave wore it in his scalp-lock.

Today our red feather in your cap comes down to us from a custom among early peoples who stuck a feather in their headdress or caps for each enemy killed, similar to notches on a gun. This interesting fact appears in the history of Hungary, Abyssinia, and the Himalayas, as well as the American Indians.

When we wear our Community Chest Red Feather, in our hat or lapel, it signified the defeat of a community enemy, such as disease, delinquency, neglect or injustice.

The Red Feather was chosen from among many suggested symbols in 1946 *as the official emblem of the Community Chests of America. It has become a three-way symbol . . . a badge for contributors, a mark of good citizenship for workers, and a national identification for the twelve thousand social, health, recreation, and educational services which benefit the lives of Americans from the Atlantic to the Pacific.*

New *Aluminum* PENICILLIN *



Aluminum Penicillin Oral Tablets provide for maximum utilization of the dose administered. Low solubility of the aluminum salt renders it much less liable to inactivation in the stomach. Destruction in the intestinal tract is inhibited by the addition of sodium benzoate.

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Open Forum

NUTRIENTS IN FOOD AFTER THE HOUSEWIFE DOES HER STUFF

T. SWANN HARDING
Falls Church, Va.

As the most famous pectorally adequate actress before Jane Russell is said to have expressed it: "It's not the men in your life but the life in your men." As those far more brainy women in the Bureau of Human Nutrition and Home Economics would put it, "It's not the life in your food, but the food in your life", or more accurately, "It's not the minerals and vitamins in the raw food you buy, but the nutrients in it when the slap-happy housewife gets through with it which makes he-men and nondroopy children."

Marked progress is being made in increasing the nutritive value of many foods by improvements in production and marketing. But there is the housewife still to contend with, while some bachelors who cook for themselves are said now and then to lose their grip on a vitamin. The extent to which consumers benefit from gains in production and marketing depends upon the way in which the food is prepared for the table.

The study put out by the brain-wave girls in BHNHE was undertaken to measure the actual effects of common methods of household food preparation on the vitamin and mineral content of a group of foods typical of those brought into the home kitchen. How much of these valuable nutrients is lost between the grocery and the dinner plate?

Preliminary study was made of 20 foods including vegetables, meats, poultry, breads, and cereals. Then much more extensive studies were made of potatoes, carrots, and peas. The nutrients determined before and after housewifely treatment were ascorbic acid, hydroascorbic acid, carotene, thiamine nicotinic acid, riboflavin, ash, calcium, phosphorus, iron, and moisture, though all these nutrients were not determined for some of the foods.

Sampling and methods of handling the foods were closely controlled to minimize the disappearance of easily destroyed ascorbic acid. Adequacy of the sampling methods was appraised by the degree to which such stable nutrients as ash and nicotinic acid were retained in the drained food, plus residual liquid. The methods of preparation studied were boiling, baking, steaming, braising, simmering, frying, and cooking in a pressure saucepan—all such procedures being strictly standardized.

For serving raw, carrots were prepared in four different ways—as strips, wedges, shreds, and gratings. In the detailed investigation on potatoes, carrots, and peas, one or more of the following procedures was included: Salt and soda added while boiling; soaking the food prior to cooking; holding the food raw and cooked; mashing; the use of plastic and metal cutlery; and making purees with a wire sieve or a food mill. In general reproducible results could be secured under these controlled conditions.

In all cases cooked foods retained less of their original ascorbic acid and thiamine than of the other nutrients studied. The retention of the former by pared and cut vegetables varied with the extent to which surfaces were exposed to air and water. However, purees and mashed vegetables retained only slightly less ascorbic acid than did boiled vegetables. Thiamine, riboflavin, nicotinic acid, and the minerals were also affected. Losses due to extraction in the cooking water were proportionate to the quantity of water used.

The destruction of ascorbic acid was accelerated if salt was put in the cooking liquid. The use of soda decreased the necessary cooking time and resulted in no less retention of nutrients than if it were not used. The kind of cutlery and sieves used seemed to have no effect on the ascorbic acid retained by any food.

The skins proved remarkably effective in conserving the nutrients of potatoes during cooking. Best procedure of all was to bake the potatoes in their skins; next best was to boil them in their skins. Frying was found to be the most destructive cooking method on ascorbic acid and thiamine in potatoes, so those French fries and home fries are pretty well denuded of value of this sort.

Since the retention of ascorbic acid in terms thereof, or in terms of ascorbic plus dehydroascorbic, was the same in potatoes and peas, it appears that degradation of dehydroascorbic acid takes place as rapidly as it is formed from ascorbic acid. During the holding of cooked potatoes, however, dehydroascorbic acid increased in proportion to the decrease in ascorbic, indicating that some of the latter is transformed into the former, which is also the more stable compound.

Boiling appears to be the cooking method most destructive of ascorbic acid and thiamine, and the longer the cooking time and the greater the quantity of water used, the worse things are in this respect. Mashing the vegetables after boiling results in still further destruction of ascorbutic acid. But carotene, nicotinic acid, riboflavin, and minerals are retained quite well in this method.

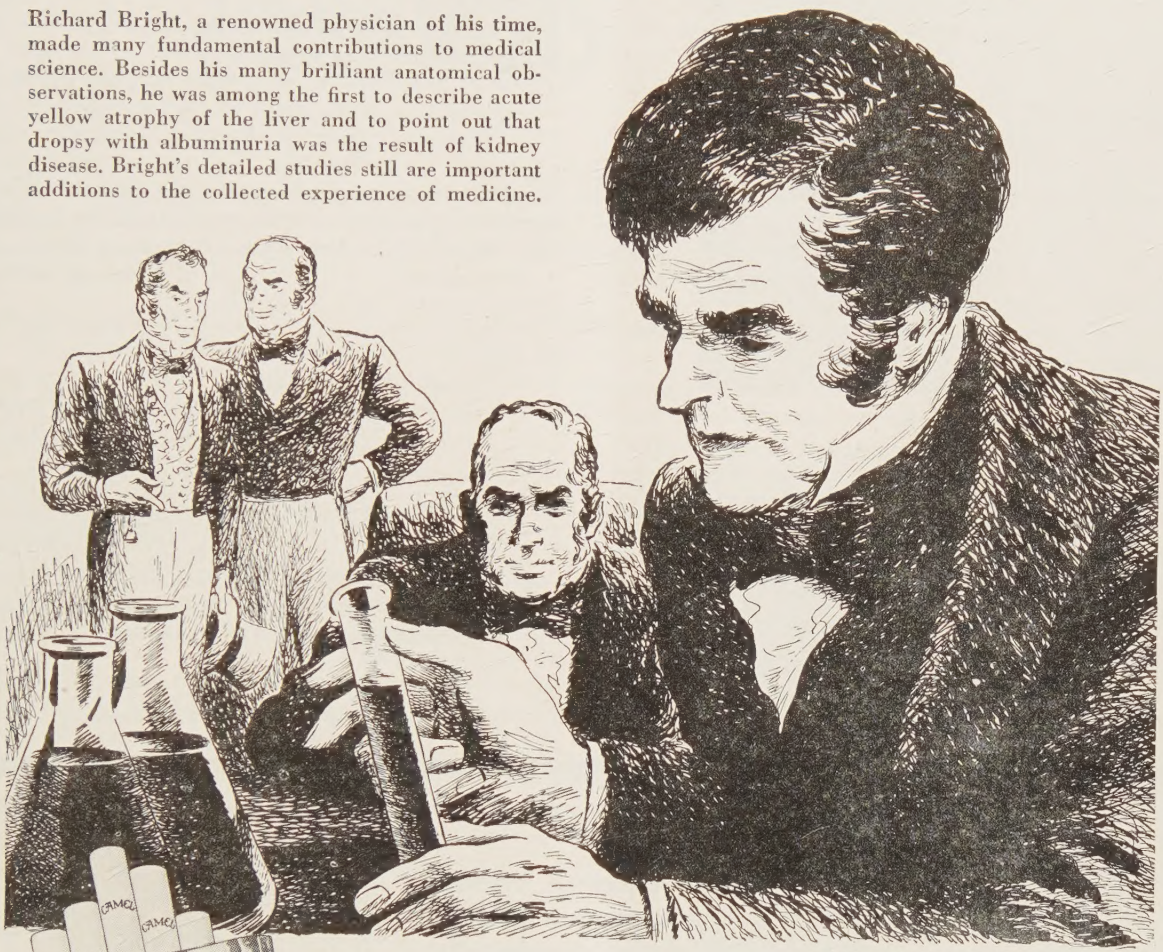
Ascorbic acid retention was excellent when green peppers and sweetpotatoes were baked, though if the latter were halved before baking there was considerable loss. Thiamine was retained to the extent of about 80 percent in biscuits and 65 percent in bread,

(*Continued on page* 402)

Experience is the Best Teacher

Richard Bright *(1789-1858) proved it in anatomy*

Richard Bright, a renowned physician of his time, made many fundamental contributions to medical science. Besides his many brilliant anatomical observations, he was among the first to describe acute yellow atrophy of the liver and to point out that dropsy with albuminuria was the result of kidney disease. Bright's detailed studies still are important additions to the collected experience of medicine.



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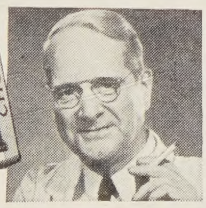
YES! Experience counts in medicine—and in choosing a cigarette, too. Thousands and thousands of smokers who have tried and compared many different brands of cigarettes have learned from experience that Camels suit them to a "T." Result? More people are smoking Camels than ever before.



Try Camels! Discover for yourself how the rich, full flavor of Camel's choice, properly aged, and expertly blended tobaccos pleases your taste. See if Camel's cool, cool mildness isn't mighty welcome to your throat.

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More Doctors Smoke CAMELS

than any other cigarette

Three independent research organizations in a nationwide survey asked 113,597 doctors what cigarette they smoked. The brand named most was Camel!

TSETSE FLY SETTLEMENT MENACE IN AFRICA—DOMESTIC ANIMALS CANNOT LIVE IN INSECT VICINITY

The Tsetse fly has left vast tracts of African land unsettled. Land, rich in resources and fair in climate, has been of no consequence to people with an eye for permanent building.

However at the recent meeting of the Fourth International Congresses on Tropical Medicine and Malaria, Dr. P. A. Buxton of the London School of Hygiene and Tropical Medicine, said that much was being done in research today to remove this formidable barrier.

Nevertheless the doctor said that sleeping sickness in West Africa is still a major disease. For example in Nigeria alone in the 16 years ending in 1946, just about half of the many cases were detected and treated. In a population of about 22,000,000, 6,000,000 are constantly at risk to endemic and epidemic trypanosomiasis (sleeping sickness.)

The sleeping sickness as it occurs in cattle, known as nagana, is much more serious than the form that occurs in humans. One may take it that, with few exceptions, no domestic animals can be kept where tsetse flies occur. Losses are not so much in the death of the cattle but in the absence of beef, milk and draft animals in these enormous areas.

Cultivation of these lands depends upon the labor of a man with a hoe. There is no manure and no mixed farming. The impossibility of using horses or oxen in these regions has greatly retarded the penetration of Africa by foreign civilization. The area of Africa infested by tsetse flies is immense. It has been estimated at some four and one half million square miles.

Doctor Buxton reported that there are two principal types of vegetation in which these flies live. These fly belts sometimes are only a few yards wide, stretching for many miles along the edge of water. The other stretches in all directions and may contain vegetation of several types. If the waterside fly belt is isolated, one can exterminate the fly by handcatching. Otherwise it is necessary to clear the vegetation to a distance of a few yards from the waterfront for a great length and then maintain the clearance by annual cutting and by grazing.

Control measures of the following types are often employed.

1. Discriminative clearing.
2. Direct attack, employing the use of DDT and other chemicals. However this method cannot be used over large areas.
3. Setting traps which consist of "de-flying house." They are erected at the crossroads, but they seem to have proven to be inefficient in killing off large numbers of the insect.

It was brought out by the doctor that only through the employment of all these measures can the tsetse fly be conquered.

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As a means of overcoming restlessness and insomnia during post-operative convalescence

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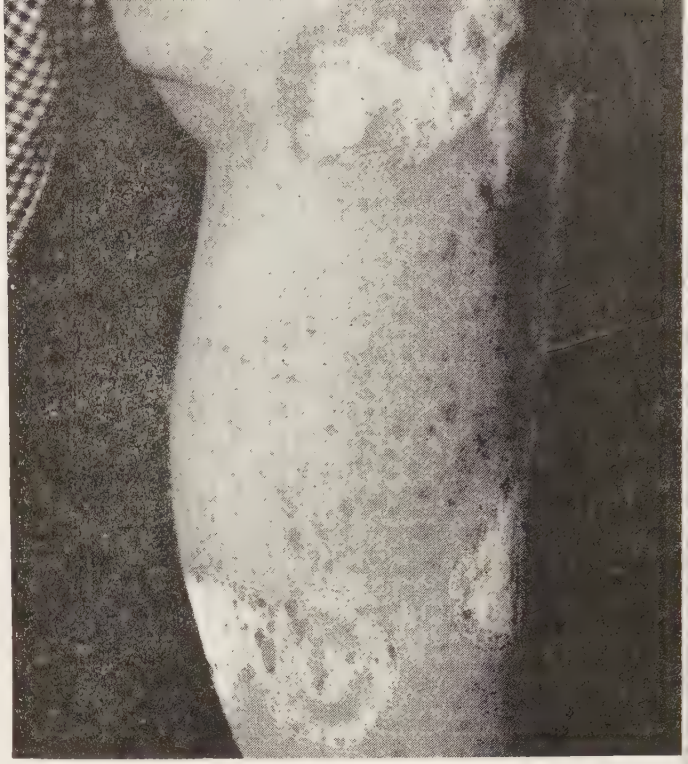
RIASOL'S unique formula has met with outstanding success in psoriasis. In most cases the unsightly lesions yield promptly to its effective action and often do not recur for long periods. Itching, if present, is usually alleviated.

Even the most fastidious patient welcomes RIASOL. It is simple and easy to apply, does not stain and no bandages are required.

RIASOL contains 0.45% mercury chemically combined with soaps, 0.5% phenol and 0.75% cresol in a washable, non-staining, odorless vehicle.

Apply daily after a mild soap bath and thorough drying. A thin, invisible, economical film suffices. After one week, adjust to patient's progress.

RIASOL is ethically promoted. Supplied in 4 and 8 fld. oz. bottles, at pharmacies or direct.



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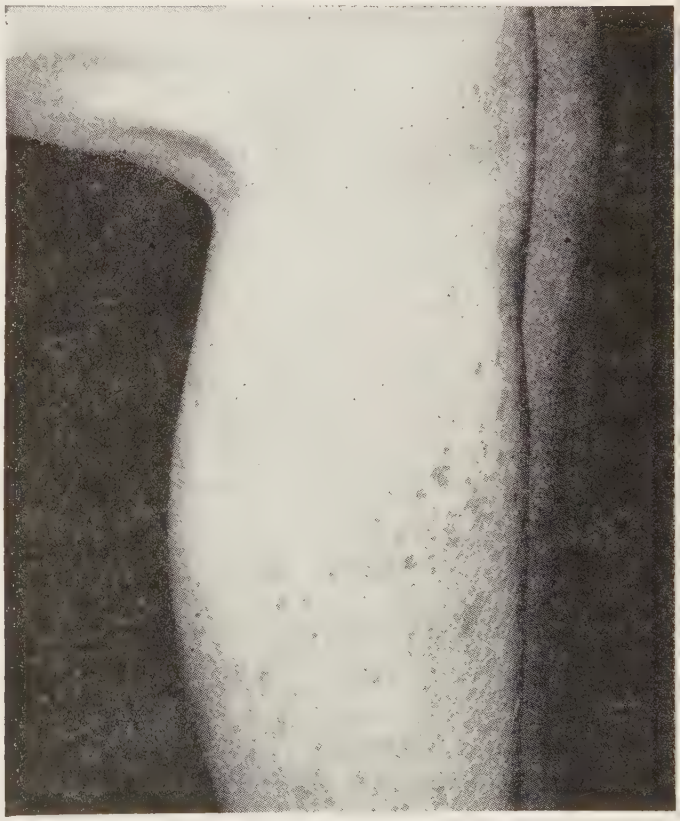

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SPECIAL NOTICE

New 64-page brochure on psoriasis has been mailed to all physicians. Write for a copy if you did not receive yours.

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RIASOL for PSORIASIS

(*Continued from page* 398)

both made with enriched flour; in corresponding products made with whole-wheat flour, retention was 90 percent. Dry lima beans and navy beans, baked after soaking and boiling, retained about half their thiamine, still more of their nicotinic acid, and all their riboflavin and minerals.

Simmered chicken retained over 15 percent more riboflavin than did boiled chicken, but only about 30 percent of the nicotinic acid, 70 percent of the iron, and half the phosphorus were retained by both methods. The remainder of these nutrients was found in the broth.

Beef, calf, and hog liver lost half their thiamine and 15 percent of their riboflavin during braising, but their other nutrients remained unchanged, except for some loss of nicotinic acid in pork liver. Pot-roasted chuck beef completely retained its original nicotinic acid, riboflavin, and minerals—when drippings were included, and the three kinds of liver mentioned also retained 75 percent or more of their thiamine after frying.

If you'd like more details on all this get, *Miscellaneous Publication of the Department of Agriculture No. 628,* entitled, "Vitamin and Mineral Content of Certain Foods as Affected by Home Preparation." Enclose 30 cents in coin to the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Granite Gables

BILL AUTHORIZES FORMATION OF NATIONAL HEART INSTITUTE

The National Heart Institute is the newest section of the Public Health Institute of the United States. This "birth" occurred a few weeks ago when Congress passed a bill authorizing its formation.

One of the Institute's most ardent advocates is Maurice Goldblatt, prominent Chicago business man and well-known for his interest and support of cancer research in the United States.

Mr. Goldblatt, who, in the course of getting the bill through the Senate, appeared before the subcommittee of Labor and Public Welfare. He proclaimed that the bill will provide for Government subsidies in addition to public subscriptions to aid in research into cures and causes of heart ailments and will also assist universities in educating more personnel for research work.

Pointing out that heart diseases are the number one killers in the U. S. today, Mr. Goldblatt said that 558,000 persons died in the country last year from various heart disorders and another seven and a half million were disabled. Yet comparatively little has been done in the way of research into the causes and cures of the various heart afflictions.

Mr. Goldblatt's first act in medical research was in connection with cancer research. He contacted the University of Chicago, persuaded them to increase its facilities for research and donated

Before the Patient Becomes Seriously Ill

The use of GRAY'S COMPOUND will save valuable time and effort in the restoration of your patient to his normal health.

Gray's Compound

stimulates the appetite and aids in the assimilation of nourishment. If the patient is "run down" from overwork, worry, seasonal colds and coughs, or suffers from the vague symptoms of old age and diminishing vitality, GRAY'S COMPOUND is usually indicated, and is a useful adjunct to such other medications as the case may indicate.

The active ingredients are: Extracts Gentian and Dandelion, Glycerine, Wine, Phosphoric Acid, Cardamom Comp. and Sugars.

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$1,000,000 toward the construction of $15,000,000 worth of buildings to house the research projects which will include up-to-date equipment to study the application of atomic energy and radio activity in the quest for a cancer cure.

Founder and president of the University of Chicago Cancer Research Foundation, he is also a member of the executive of the American Cancer Society. He started an intensive campaign for funds and largely through his initiative contributions from the American public and the U. S. government have increased from an average of $3,000,000 annually to a high of $42,000,000 this year.

ALPHA CHI OMEGA CONTRIBUTES TO CEREBRAL PALSY RESEARCH

The Alpha Chi Omega sorority has made possible scholarships for specialized training in cerebral palsy. This national woman's organization has adopted help to the cerebral palsied as its major national altruistic project. The $5,000 yearly grant has been made to the National Society for Crippled Children and Adults, Inc. This is the first national scholarship program established to meet the challenge of a crippling condition that disables some half million Americans.

The eight physicians, surgeons, and therapists, recipients of the award, will help meet the acute shortage of specialists trained in cerebral palsy.

The scholarships cover study at the Children's Rehabilitation Institute, Cockeysville, Md., under supervision of the Institute's director, Dr. Winthrop M. Phelps. Dr. Phelps, internationally recognized authority on cerebral palsy, is also president of the American Academy for Cerebral Palsy and chairman of the National Society's Medical Advisory Council on Cerebral Palsy.

The National Society, whose services to all types of handicapped persons is made possible by the annual sale of Easter Seals, is the only agency conducting a nation-wide program on behalf of the cerebral palsied.

The recipients of the new scholarships will assist the Society's 2,000 state and local affiliates in expanding cerebral palsy facilities and research through hospital diagnostic and treatment clinics, nursery schools, for cerebral palsied children, treatment centers, and special education and recreation projects.

NEW MALTINE LABORATORIES COMPLETED

The Maltine Company has completed the removal of equipment and staff to its new laboratories at Morris Plains, N. J. The nearby research building houses the animal colony, a library, pilot plant and laboratories for the research staff. Each research division is equipped with its own set of laboratories.

A separate powerhouse provides heat and steam and houses the 150,000 gallon fire reservoir. Water is provided by the company's own wells.

Productive capacity at the new laboratories is 200 percent greater than that possible at the former Brooklyn location.

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ORGANIDIN is absorbed readily from the gastro-intestinal tract, with less irritation and less toxicity than is produced by elementary iodine. Thus it permits a maximum effect with a minimum iodine dose.

A superior product which may be administered over an extended period of time with little possibility of causing gastro-intestinal disturbances or iodism.

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Critique

Impure penicillin: *British Medical Journal* for April 24, 1948, ran an editorial entitled, "The Advantages of Impure Penicillin." The gist of the matter is that the imperfectly purified penicillin of other days worked better than today's highly purified product. This is attributed to the presence of unknown substances not related to penicillin or its derivatives, and the editorial suggests a return to the more impure product for intramuscular injection, though the highly purified product is recommended for intrathecal and intraocular use. Earlier it was also hoped that modifications of the complex penicillin molecule would lead to a widening of its sphere of usefulness.

Soybean protein They are doing new things with this biologically excellent protein at the Department of Agriculture's Northern Regional Research Laboratory in Peoria. Versatile beyond description, this protein may turn up as a thermoseal, as glue, in the form of jellied desserts or ice cream, as the meringue on a lemon pie, or even in jellied cocktails with a new new look. After the oil has been extracted with hexane, soybean flakes can be debittered by an additional extraction with alcohol. This also rids them of certain anticoagulants or gel-inhibitors. The water-soluble part of the flakes, say about 40 percent, is suitable for many industrial uses and also in an increasing number of food specialties.

In solution, this very light-colored soybean protein will whip like eggwhite even when fat or oil is added. If flavor, sugar, and other ingredients—none from a cow, however—are added, it will freeze like a smooth-textured ice cream, indistinguishable from the bovine milk product unless you let it melt.

Actually, it merely warms up but does not melt readily; it holds its shape. Under certain circumstances this protein will gel in 50-percent alcohol, hence the jellied cocktail possibilities. Finally this protein forms a permanent seal, a coating to seal envelopes which cannot be steamed open, and a glue that will not only cause wood to adhere to wood, but metal to metal, and even glass to glass.

It is economical and plenty strong. The future of these developments is particularly promising.

Old age is what you make it A doctor wrote to the British *Lancet* not long since about a woman patient who was eager to recover so that she could get back to her work. As she was 72 he wondered what she did. It turned out that she took care of an old lady. Age is what you make it, apparently, or what nature made you. The writer's father enjoys perfect health at 88, runs for buses and trains, has two girlfriends—he has been a widower about five years—and remembers an occasional cold, plus a spell of lumbago as his only illnesses.

The other night we attended the 11th birthday party of a young girl. Her great-grandfather, 80, was present; he works daily as our town treasurer and drives a big car. He particularly likes Rocky Mountain driving and goes out every summer and swings around the curves with 1,000-foot drops on the side just to get a thrill. When his great-granddaughter paraded around in new finery given her as presents, and got down to a halter and shorts, he leaned over to remark that she really had very attractive legs for a child of 11. He mopped up three cups of coffee and all the birthday cake he could get hold of and left at 9 p. m., saying he was going to put on a pot and have some really good coffee before he went to bed as he didn't sleep well unless he drank three cups before retiring.

Like the writer's father, he ate what he pleased and went where he pleased, without let or hindrance. No science of gerontology is required by either of them and no medical care peculiarly slanted to the problems of old age.

A week or so later I met the 90-year-old brother of the 80-year-old great-grandfather; he was a thin, tough-looking fellow with a passion for coffee, alcoholic liquor, and big meals. He turned out to be a regional sales manager for a steel company with headquarters in Denver. However, as this took only seven hours, five days weekly, he was also superintendent of a museum in Denver and worked there at nights and Saturdays. He had just flown to Chicago to address a sales conference, after which he flew to Washington to seek business for his firm.

While here he visited a great-grand-niece at her home. She had been trying for two weeks to get her 30-year-old husband to put the screens in, but it was a hard job and he had neglected it. Now a fly lit on the old gentleman's nose whereupon he shouted, "What the hell's the matter? Where are all the screens?"

Once the situation was explained to him he whipped off his coat and "righted it" in an hour and then drove on into Washington and sold some more steel.

How do these fellows get this way anyway? Not to mention 90-year-old Liberty Hyde Bailey, father of American Agriculture, who skips merrily about the Amazon and elsewhere by plane, collecting palm specimens, and writes a new monograph every year. When does old age begin? Who knows the answer to that one?

How now? In the Mayo Lectures on *Nutrition*, for 1924-25, E. F. du Bois remarked that it is doubtful whether the true level of protein metabolism in heart failure and renal failure would ever be found. He assumed that it was at least as high as that in starving persons, and that four to six grams of nitrogen daily must be supplied in the food. There was said to be no valid reason for the low-protein diet in such diseases and ample calories, plus 20-30 grams of protein daily, would be required to depress urea formation to its lowest in kidney disease.

Is sex bad? In a study reported some years ago of 501 problem children, all chronic and very bad delinquents, who were located with foster families, it was found that a past history of physical sex relations did not correlate at all with the difficulty of placing them or their final reform. Indeed children who have had only wild sex phantasies without any physical experience whatever, often prove harder to manage than those who have tasted forbidden fruit. Sexual promiscuity in girls has rarely been found to prevent their fairly easy adjustment in, and to new and more healthful environments. Few sex-problem girls placed in foster families in the above-mentioned study became illegitimately pregnant. Said the investigators: "Contrary to much current opinion which is blind to deeper issues, physical experiences and practices often do not rate so high in importance as the mental aspects of sexual life."

All this was long before Kinsey—a decade and a half before, mind you. The smoking habit when contracted early, was also proved a minor consideration. Even when excessive, it rarely prevented successful placement of the child. Finally, it appeared in this study that heredity played a very small part and environment a very large part in successful placement.

Life Life consists of a continued and orderly stream of reactions. There is nothing chaotic about it. Some units of living matter are so small that the ordinary physico-chemical laws scarcely apply to them. An organism that is just visible occupies about the same volume as 555 million molecules of water and should contain only about one hydrogen ion at Ph 7.

Feeble-mindedness Said Michael Frederick Guyer, some years ago in the Mayo Lectures on *Heredity*, it is estimated that with 300,000 visibly feeble-minded individuals in the U. S. and a population of over a hundred millions, there must be between 7 and 10 million apparent normals who are carriers of feeble-minded genes and any two of whom, chancing to marry, would probably have 1 child out of 4 mentally impaired, and 2 out of 4 capable of transmitting mental impairment. Hence, if we could blot out all our present feeble-minded at one swoop, we should still have an enormous reserve of carriers which could cause a resurgence of at least 100,000 feeble-minded individuals in the F_1 generation.

Heredity Said Clarence Erwin McClung in the Mayo Lectures on *Heredity*, 1923-24: "In the effort to clarify my understanding of the meaning of heredity, I looked up the definitions presented by different writers and was greatly astonished at the marked diversity thus exposed. Space will not permit a repetition of these definitions, but the varied conceptions entertained may be indicated by saying that, heredity is conceived by different biologists to be a relation, act, fact, process, property, material, organization, rule, resemblance, or link. How many other things it might prove to be on further search for definitions I do not know, but at this point I perceived that my efforts to secure clarity of understanding was not making much progress by this method, and so it was dropped.

"Even to the uninitiated it is apparent that a thing cannot be at once a process, a material, a property, and a relation . . . Warned by my experience in attempting to find help in the solution of scientific problems by definition, in the case of heredity, I did not attempt it when the term 'sex' came to be considered."

Post-anesthetic sickness Still worth rereading is the article on, "Etiology and Prophylaxis of Post-Anesthetic Sickness", by J. Ross Mackenzie of Aberdeen, Scotland, in *The Lancet* for December 21, 1929.

Standard drugs Back in 1930, Dr. Ernst E. Irons, dean of Rush Medical College, was beseeching physicians to use only standard drugs in writing their prescriptions. He said proprietary drugs were nearly always more expensive and certainly were no more effective. He went on: "The shelves in some hospital pharmacies remind one of the exhibits of proprietary medicines in a chain drug-store-soda-fountain-lunchroom." Well how far did he get in this righteous campaign of his?

Sex conduct Said Charles W. Margold, writing on "The Need of a Sociological Approach to Problems of Sex Conduct," in the *Am. Jour. of Sociology*, January and March 1926, "Even in primitive societies often cited as completely given over to promiscuity, sex conduct is always socially regulated. Biological regulation is invariably found insufficient. Although customs, which may seem to us strangely unregulated and promiscuous, undoubtedly do exist, there is always social control, there are always certain tabus, and the act must always be performed in accordance with certain social conventions and group restraints." Numerous individual incidents were cited thereupon to sustain this point.

Climate and man You'll find much of interest on this subject in Robert C. de C. Ward's, "Climatic Factor in Man's Physical Environment," which appeared in February 1930, *Scientific Month*.

Gloucester system The Gloucester system of medical service in England was described in a Supplement to the *Lancet*, February 8, 1930, and was abstracted in an editorial page 250 of the same issue. It was a successful effort fully to coordinate the work of practitioners, nurses, and hospitals in specific localities for the public benefit and had then been in operation eight years.

The Critic.

Attack on Brookings Institution's Report Issued

A carefully documented attack on the Brookings Institution's report, *The Issue of Compulsory Health Insurance,* was launched yesterday by two of the nation's leading research organizations. Dr. Michael M. Davis, chairman of the Committee on Research in Medical Economics, and Dewey Anderson, director of the Public Affairs Institute, in a seventeen page public document entitled *Medical Care for the Individual,* scored the Brookings Report as "confused, contradictory, and not based on any statement of the facts or any analyzed body of experience."

They report that although the tenor of the Brookings Report is a defense of "poor man's medicine" and a plea for the continuation of a medical dole, it is forced to the conclusion that health insurance should be made compulsory. It proposes that the Government compel individuals to subscribe to voluntary health insurance plans. This impractical recommendation is rejected by Davis and Anderson: "It would be complex and confusing, very costly, and require an invidious degree of public regulation and place the benefits of public taxing power in private hands."

The Davis-Anderson report was undertaken at the request of Senator James E. Murray (D. Mont.) and Senator Claude Pepper (D. Fla.), both of the Senate Sub Committee on Health which has been considering national health programs.

An interesting sidelight on the Brookings Report is that Dr. Lewis Meriam, one of its authors, previously wrote an attack on the entire system of social security and is an outspoken foe of national health insurance.

Here is a summary of the Davis-Anderson study:

1. *The Evidence:* The Brookings Report's 144 pages of data contain "no facts about the actual experience of voluntary and compulsory health insurance plans, despite the fact that a number of American plans have been in operation for more than a score of years, and national systems have operated abroad for more than half a century."

2. *Administration:* The Brookings claim that doctors would have to keep costly and complicated records to receive government compensation under national health insurance is also refuted. "It never occurred to the Brookings authors that physicians in their private practice today have to maintain a record of their visits, operations and other procedures for each patient. Under voluntary health insurance plans, physicians paid on a fee-for-service basis must keep records to prepare their bills against the plan."

3. *Regimentation:* Doctors would be strictly regimented under any national health insurance plan

(*Continued on page* 407)

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if abuses and frauds are to be avoided, the Brookings Report claims. Davis and Anderson state: "This ignores the fact that voluntary health insurance plans have to deal with exactly the same problems." The Brookings Report also by-passes the experience of the Veterans Administration's 'home-town-care' plan, which has the enthusiastic cooperation of most medical societies. "If regimentation has not developed in that program—a form of State medicine under centralized authority—it is absurd to insist that it must appear in a highly decentralized locally controlled national health insurance plan."

4. *Choice of Doctors:* "By ignorance or design, the wording in the Brookings Report implies that a government official decides what doctor each patient shall have. Actually, each person chooses his doctor and has the absolute right under the proposed law to do so."

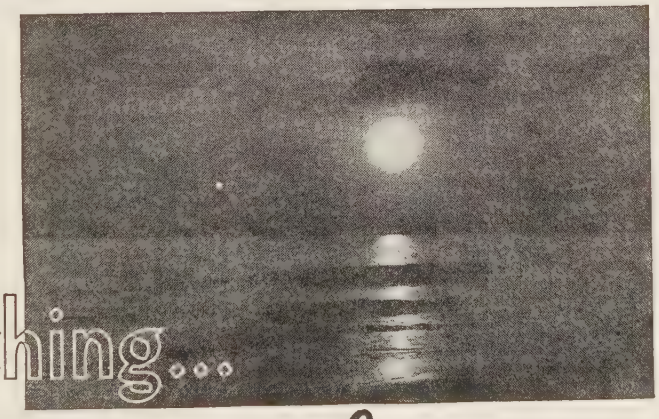
5. *Government Control and Politics:* The quality of medical care would be lowered under national health insurance, the Brookings Report charges, since private practitioners would be controlled by federal directives. Davis and Anderson point out, however, that the National Health Insurance bill, S. 1320, places "strict limits on the powers of the federal government, and delegates the real responsibility to local areas . . . Neither doctors nor patients, under this national health insurance scheme, would have any contact with the federal government and only rarely with their state government."

6. *Defects of Voluntary Plans:* The Brookings Report omits any discussion of their shortcomings which would be solved by national health insurance. Even under favorable circumstances, administrative costs of voluntary plans run 7 to 10 percent higher than national health insurance. Despite 16 years of operation, voluntary plans furnish comprehensive medical care to less than 3 percent of the population and are unable to give wide enough coverage at low enough rates to the entire population.

7. *Personnel Needs:* A shortage of doctors and professional personnel would make it impossible for national health insurance to operate, claims the Brookings Report. Davis and Anderson point out that whether or not there is a shortage, the main problem is that "doctors are not well distributed. . . . There are too many in the cities, too few in rural areas. National health insurance, by guaranteeing payment for services wherever rendered, will be a most powerful factor in correcting that maldistribution."

After some 30 pages of statistics, the Report discloses that it is referring to consumers with total incomes of $2,000 or over at pre-war levels. By its own statement, the Brookings Report reveals that in those days 65 percent of our population earned less than $2,000 per year and needed help to meet the cost of serious illness.

In a buried paragraph on page 185, the Brookings Report finally admits that the large majority of American families could only pay their medical bills "under one condition, namely, that they can purchase comprehensive medical care available throughout the country paid on a budgetable basis."



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THE STRIAE OF PREGNANCY: A NEW ETIOLOGICAL CONCEPT

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The literature is replete with detailed observations regarding the appearance and incidence of the so-called *striae gravidarum, lineae albicantes, striae cutis distensae atrophicans,* etc., but there is a manifest lack of complete understanding of the basic etiological pathology (1 to 26).

The classical treatise of Credé on this subject is perhaps the most complete. He classifies his observations as follows:

1. These so-called striae of the skin of the abdomen develop in many different ways in the majority of pregnant women. They very seldom appear in the first half of pregnancy, often first appearing in the last months.

2. They change their appearance after delivery, but never disappear.

3. In a few cases they do not appear at all, even in multiple pregnancies.

4. They appear in some cases in the second or third pregnancy for the first time, or new striae are added with additional pregnancies.

5. They appear in some illnesses in which there is rapid and enormous stretching of the skin, as in large ovarian or uterine tumors, ascites, etc. Such illnesses occur not only in the aged, but in younger subjects. Nevertheless, if such cases come to medicolegal decisions the usual inference is pregnancy.

6. Very similar striae are found at times on the breasts and upper thighs, the buttocks and calves of the legs. They appear to be of the same nature in all localities. Regarding the relative incidence, Credé reports that in 100 cases of full term pregnancy 90 had evidence of abdominal striae.

Weber (18) reports two unusual cases of *ideopathic striae atrophicae,* one in a 13-year-old girl, associated with precocious development at puberty, and the other in a man aged 44, who gave a history of very rapid growth at puberty. Weber thought that the condition might be due to "an insufficiency of cutis, with perhaps a deficiency of elasticity, which results in multiple cleavage to adjust to more rapidly growing parts beneath."

Rolleston (15) reports a case of *striae patellaris* following typhoid fever. He considered the abnormal trophic condition of the cutis (secondary to the prolonged febrile state) as mainly responsible, with possibly an associated increase in tension of the skin due to maintained flexion of the knees while in bed. Hurford and Snell (26) and other authors report cases of striae *atrophicae* in pulmonary and other forms of tuberculosis, due perhaps to conditions similar to those suggested by Rolleston in his typhoid-fever case.

Rosenthal (21) summarizes the cause of striae as follows:

1. Maldevelopment: insufficiency of cutis with deficiency of elasticity.

2. Rapid stretching, due to tumor, obesity, growth, pregnancy, etc.

3. Endocrine dyscrasias: particularly pituitary (resulting in growth disturbances).

4. Toxic: e. g.—tuberculosis, typhoid fever, cachetic states, etc. (In these conditions the skin would be subject to trophic disturbances.)

The attention of the author was first attracted to this subject by the observation of an unusual case of striae in a woman of 28 years, who had recently gone through a full term pregnancy. Strange to say, there were no signs whatever of abdominal striae, although the hips and thighs showed multiple scarring from old striae, apparently developed at puberty.

The history revealed that menstruation began at eleven years, following which precocious development occurred, associated with marked adiposity, particularly of the parts involved in the striation. The fact, however, that a much greater distension of the skin occurred without striation in the pregnancy at a later date, when normally the skin would be less elastic, was strongly suggestive of some unrecognized conditioning factor which may have altered its elasticity.

In 1937 Lanman and Ingalls (27) established the fact that optimal vitamin C status increases and

minimal vitamin C status (scurvy) decreases the tensile strength of the skin and subcutaneous connective tissue. In the following year Taffel and Harvey (28) confirmed their findings. Hartzell and Stone (29), Jones *et al* (30), Bourne (31), and others have reported on the relationship of tensile strength of tissues to vitamin C status.

Applying the above to the author's case, as reported, it was found that during the period of most rapid development following puberty the subject was residing in an isolated rural district, where the supplies of fresh fruits, citrus and otherwise, were very scant. Her diet at that time was predominantly carbonaceous. During the pregnancy ten years later she was living in a large city, where citrus and other fresh fruits were abundant. During this period she made liberal use of orange juice as part of her pre-natal nutrition regimen.

It was thought that the difference in vitamin C status in the two periods in question may have been the determining factor in the selective incidence of the striae. Accordingly, it was decided to institute a series of clinical observations on present-day gravid and parturient women to determine the possibility of an etiological correlation in their vitamin C status and the incidence of the striae.

The first series of observations were made in March, 1946, in the obstetrical department of a large American hospital, with the cooperative assistance of a local intern and the Chief of the obstetrical staff. In all 26 women, mostly in the third trimester of pregnancy, were observed at the prenatal clinic. In all cases the dietary history was taken and the plasma-ascorbic acid level was estimated by titration with dichlorphenol-indophenol in standardized solution.

A graphic diagram depicting the disposition of the striae in the abdominal quadrants was also made in each case. The ages ranged from 13 to 42 years, the average being 25 years. Eight were primiparous and 18 were multiparous. Five of the primiparae had no abdominal striae, while the remaining three were slightly striated. Eight of the multiparae had no striae, while the remaining 10 were striated, 7 slightly, four moderately and 2 heavily. One of the subjects, in her tenth pregnancy, had no trace of striae, although she had previously given birth to a 10½-lb. infant. The average incidence of striae in the whole group was 50 percent.

The two subjects with the lowest plasma-ascorbic acid level (0.75 mgm. percent) had the greatest degree of striation, while the three subjects having the highest level (2.1, 2.3 and 2.4 mgm. percent) were free from striae. The average plasma-ascorbic acid level of the striated subjects was 1.11 mgm. percent, whereas the average level of the non-striated subjects was 1.39 mgm. percent.

One of the subjects with the greatest degree of striation, now in her second pregnancy, also exhibited extensive scarring from cervical and perineal lacerations, the latter having required 21 stitches. Being on a gallbladder regimen, her diet was very deficient. She never used citrus fruits and rarely tomatoes. Her daily intake of vitamin C was estimated at 11.03 mgm.

Discussion

It is now a well recognized fact that optimal vitamin C status improves the tensile strength of tissues generally, particularly the connective and vascular tissues, thus favoring resilience and elasticity of these structures. Conversely, C-hypovitaminosis is conducive to fragility and vulnerability of these same tissues. This stabilizing effect of vitamin C is dependent upon enhanced proliferation of fibroblasts and collagen fibrils in the reticulo-dermal tissues and the development of an effective intercellular cement substance, thus imparting cohesive strength to the tissues.

The absence of the vitamin is believed to produce liquefaction of the intercellular cement substance, thus favoring abrasion and disruption of tissues under stress or strain. Thus a physiological explanation may be provided for the mechanism of the striae of pregnancy and other obstetrical complications associated with instability or inelasticity of tissues, including cervical and perineal lacerations, abdominal hernia, rupture of the uterus, and hemorrhage—pre- and postpartum, as pointed out by the author in a previous paper (32), all of which have a direct or indirect relationship to maternal mortality.

Although not the immediate cause in all such eventualities, it is quite conceivable that C-hypovitaminosis may well be a culpable contributing factor. One might even go a step farther and attribute the postpartum sag in the feminine figure to the undue redundency of tissues caused by the multiple rupture and scarring of the skin and supporting connective tissue of the breasts and abdomen as usually involved in the striation.

While the number of cases observed in the above series is not large enough for conclusive findings, the indications are nevertheless suggestively significant:

1. Since Credé's time there has apparently been a marked reduction from 90 percent to 50 percent in the incidence of the striae of pregnancy. On the basis of the author's hypothesis of vitamin C deficiency as the basic etiological factor, this reduced incidence could be reasonably accounted for by the great increase in the production, distribution and consumption of citrus and other fruits rich in vitamin C. In central Europe, where Credé's observations were made nearly a century ago, scurvy was prevalent, owing to the general scarcity of citrus and other fruits, consequent to the meagre transportation facilities of those days.

The health protective value of vitamins was then unknown. Today, particularly in America, the picture has greatly changed.

Citrus fruit production and distribution, under modern transport conditions, has grown to tremendous proportions. The citrus fruit industry had its inception in America in 1886, in which year the total production amounted to 3,361,000 bushels. The production has rapidly increased until at the present time (1946) the annual crop amounts to 300,000,000 bushels.

The production of canned citrus products began in U.S.A. in 1929, in which year the total pack was 6,150,000 lbs. By 1946 the annual output had

reached a total of 1,738,170,000 lbs. The production of canned tomato juice began in U.S.A. in 1930, in which year the total pack was 6,930,000 lbs. By 1945 the annual pack of this juice, second only to citrus in vitamin-C content, had reached a total of 924,000,000 lbs. Today the use of these fruits and juices, particularly in America, has become routine as an essential part of modern nutrition.

It is therefore obvious that the young women of today are much better nourished, with respect to vitamin C status, than were the women of Credé's time.

2. The recorded incidence of *striae cutis distensae* following infectious fevers (typhoid, tuberculosis, etc.) could also be accounted for by the depletion of the vitamin C reserve, secondary to the toxic effect of the febrile process. Vitamin C, by reason of its combined reducing and oxidizing properties, is antitoxic in action; but in this toxine-neutralizing action the vitamin itself is neutralized. Many observers have reported marked deficiency of vitamin C in tuberculosis. Obviously, the same conditions would prevail in typhoid fever.

3. The concurrence of extensive cervical and perineal lacerations in the one case in the author's series exhibiting the greatest degree of abdominal striation is suggestive of the possible etiological correlation of these and other obstetrical complications referred to in a previous paragraph, with C-hypovitaminosis as a possible common factor.

4. These observations suggest the advisability of a more general application of the simple colorimetric test for C-vitaminotic status, which may readily be made by titration of the urine or blood plasma with a standardized solution of dichlorphenol-indophenol (Hoffmann-La Roche).

For rapid determination the author employs a modification of Tillman's method, whereby the initial test dose of 300 mgm. of vitamin C is omitted. One tablet of the titration reagent, corresponding to 1 mgm. of vitamin C, is dissolved in 1 oz. of water. To a small amount of this indigo colored solution in a test tube is added an equal amount of urine, the degree of decolorization indicating the vitamin C status, rapid and complete decolorization being optimal. During the past eight years the author has made well over five thousand clinical applications of this simple test and found it to be of great value in estimating and correcting vitamin C status.

5. If the author's hypothesis, as herein set forth, is established, the young women of today will have at their command a simple and pleasant dietary means of avoiding the premature loss of the youthful elasticity of their tissues, and of thus potentially nullifying to a great extent the hazards of child bearing.

In the further exploration of this field the collection of clinical data in a larger series of cases is now underway in a Canadian hospital. In this series an attempt will be made to more definitely determine the etiological correlations above intimated. It will be difficult, however, to correlate the incidence of striation and perineal laceration, owing to the general prophylactic practice of episiotomy, which eventually may be obviated by the prophylactic application of the author's hypothesis in prenatal dietary instruction. The results of these additional observations will be embodied in a subsequent report.

Summary

The literature relative to the striae of pregnancy is reviewed, and Credé's classical treatise is cited as most complete. All authors seem to agree that the striae are produced by rapid and extensive stretching of the skin from various causes, in different parts of the body, in the presence of decreased elasticity of the involved tissues. None, however, has elicited the specific factor causing the lack of elasticity.

Based on the recently established knowledge that deficiency of vitamin C is conducive to decrease in the tensile strength of tissues generally, the hypothesis that C-hypovitaminosis is the culpable etiological factor in striae gravidarum is formulated. It is intimated that other obstetrical complications involving the tensile strength and elasticity of tissues, including cervical and perineal laceration, abdominal hernia, rupture of the uterus, and hemorrhage (pre- and postpartum) may also be similarly related.

In a preliminary report, clinical data regarding the correlation in the incidence of the striae and the plasma-ascorbic acid level in a series of 26 gravid women are presented. In general it was found that the degree of striation was inversely proportionate to the ascorbic acid level. Although the majority of the subjects were multiparous, 50 percent of the series were found to be free from striation. Ninety years ago, according to Credé, only 10 percent of gravid women were exempt from striae. The author attributes this marked reduction in incidence to the greatly increased consumption of citrus and other fruits of high vitamin C content within the last century.

Although the number of cases studied is not large enough for conclusive evidence, the apparent etiological correlations are suggestively significant. A second and larger series of cases is now under investigation, the findings in which will be embodied in a subsequent report.

Acknowledgement

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16 Gothic Avenue

STUDIES OF SULFANILAMIDE DETOXIFICATION IN PATIENTS

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In recent years the uses of sulfonamides have been widely explored, and their bacteriostatic effects amply demonstrated. There are, however, a number of drawbacks to the use of these drugs, principally the occurrence of toxic symptoms in patients who are already debilitated by the bacterial infection. These toxic manifestations are frequently seen as a marked cyanosis due to the formation of methemoglobin. In addition there are toxic effects from the sulfanilamide on liver function, demonstrated by the appearance of bile pigments in the blood, and jaundice of the skin.

The detoxification of sulfanilamide takes place principally in the liver, and as demonstrated by previous work (1), may be accelerated by the administration of detoxifying agents. In the case of sulfanilamide the general concensus is that the toxic symptoms are due to the presence of both methemoglobin and free sulfanilamide in the blood.

The plan of the present study was to gain some objective quantitative evidences of the toxic effects of sulfanilamide in humans. We therefore studied the blood of patients at intervals after the administration of 50 grains of sulfanilamide. The blood studies made were the O_2 capacity, methemoglobin concentration, the total sulfanilamide in the blood, and the percentage acetylated. In the same group of patients similar studies were carried out after the administration of 50 gr. of sulfanilamide plus 50 gr. of a combination of detoxifying chemicals, which has the following composition:

Calcium gluconate	22 percent
Calcium glucuronate	11 percent
Glycine	43 percent
Ascorbic Acid	11 percent
Cystine	11 percent
Choline chloride	2 percent

Method

The work carried out on patients was done almost entirely with a combination of detoxifying chemicals which had been determined to be optimal for the purpose (1), but it was deemed necessary to conduct sufficient animal experimentation to determine the effect of the individual components, ascorbic acid, glycine, calcium glucuronate, cystine and choline chloride.

Table A presents the data obtained in this manner. Rabbits weighing from 2 to 4.5 kilograms were used as experimental animals. It was soon found that doses of sulfanilamide which reduced the oxygen-combining power sufficiently for testing would result in the death of the animal in the next day or two. This fact made it impossible to use each animal as its own control and thus reduced materially the value of the data. Biological variations in blood levels attained and in degree of acetylation were great.

There is little doubt but that ascorbic acid is the prime factor in the restoration of oxygen-combining power but it is not the only active chemical in the

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TABLE A

The Effect of Various Detoxifying Agents on Oxygen-Combining Power

Set	Sulfanilamide dose g./Kg.	Treatment	0 Hrs.	2 Hrs.		4 Hrs.		6 Hrs.		No. Animal	Vol% Max. Drop	Vol.% Recovery from Min
			O_2 Vol.%	O_2 Vol.%	Sulfa mg.	O_2 Vol.%	Sulfa mg.	O_2 Vol.%	Sulfa mg.			
1.	2.0		15.3	14.0	65	13.2	56	11.6	53	7	3.7	0.0
2.	3.0		13.3	12.7	71	11.9	67	10.8	69	6	2.5	0.0
3.	3.0	3 g/kg ascorbic acid	14.5	15.1	76	13.9	79	14.9	78	7	0.6	1.0
4.	3.0	1.5 g/kg ascorbic acid	13.6	13.0	63	12.9	64	11.1	67	4	2.5	0.0
5.	3.0	1.5 g/kg ascorbic acid with sulfa & same dose in 1.5 hrs.	17.2	16.7	64	15.6	43	14.4	59	2	2.8	0.0
6.	3.0	3 g/kg ascorbic acid with sulfa & same dose in 1.5 hrs.	18.5	15.8	70	13.8	54	17.5	61	2	4.7	3.7
7.	3.0	3 g/kg ascorbic acid with sulfa & 16 hrs. before	15.6	16.3	[illegible]	15.8	50	----	60	2	0.0	0.0
8.	3.0	3 g/kg ascorbic with sulfa & 2 hrs. later	14.0	13.4	74	14.3	103	15.8	100	2	0.6	2.4 Never decreased
9.	2.0	2 g/kg ascorbic with sulfa & 2&4 hrs. after	16.2	16.9	66	16.7	77	----	76	2	0.0	0.0
10.	3.0	3 g/kg cystine with sulfa	15.9	15.5	67	15.2	83	14.5	73	6	1.4	0.0
11.	2.0	2 g/kg cystine with sulfa & 2&4 hrs. after	13.1	12.4	52	11.9	69	10.7	64	4	2.4	0.0
12.	2.0	2 g/kg cysteine with sulfa & 2&4 hrs. after	13.2	13.5	38	13.8	46	12.5	39	4	0.7	0.0
13.	2.0	2 g ea. glycine & glucuronate + 0.2 g. choline with 2 & 4 hrs. after sulfa	15.6	14.9	37	13.3	54	14.1	54	4	2.3	0.8
14.	2.0	2 g/kg glucuronate with sulfa & 2 & 4 hrs. after	16.5	16.1	60	15.8	61	15.4	47	6	1.1	0.0
15.	2.0	2 g/kg glycine with sulfa & 2 & 4 hrs. after	20.5	17.2	48	16.8	80	18.5	88	1	3.7	1.7
16.	2.0	0.2 g/kg choline with sulfa & 2 & 4 hrs. after sulfa	17.9	18.1	94	16.7	118	----	102	1	1.2	0.0

preparation used clinically. Cystine would appear to be somewhat effective and cysteine is very potent. Glycine was negative, but calcium glucuronate and choline chloride exerted slight activity.

Although this series was not large, it indicated that restoration of oxygen-combining power and reduction of methemoglobin production could be brought about without significantly altering the death rate in the rabbits.

Because of the peculiarities of catatonic schizophrenia patients, we have avoided using patients with this diagnosis. Patients were chosen from the wards of Bellevue Psychiatric Hospital, N. Y., who were to all intents and purposes—*physically normal.* The diagnoses in these cases included psychopathic personality, recovered acute alcoholism, schizophrenia other than the catatonic type and recovered reactive depression. On the morning of the experiment, patients received no breakfast. After the administration of the sulfanilamide, blood specimens were obtained at 2, 4, and 6-hour intervals. From 1 to 5 days later, the same patients were given 50 gr. of sulfanilamide plus 50 gr. of the mixture of detoxifying chemicals. Blood samples were again obtained at 2, 4, and 6-hour intervals.

The O_2 capacity was determined on these specimens by the method of Van Slyke (2). The sulfanilamide and the degree of acetylation were determined on the same specimens by the method of Bratton and Marshall (3). Methemoglobin determinations were made according to the method described by Wendel *et al.* (9).

We found that the administration of a single dose of 50 gr. of sulfanilamide would produce a definite cyanosis in almost every patient. They frequently complained of nausea, severe malaise, headache, and on several occasions patients actually vomited. Patients who developed the most severe clinical symptoms were especially observed when the sulfanilamide was administered with the detoxifying agents. It is our impression that there was a distinct improvement in the clinical course. The degree of cyanosis was definitely diminished, and these patients experienced much less difficulty than during the administration of sulfanilamide alone.

Results

The changes produced by the administration of sulfanilamide are presented in Table B. It may be seen that the total sulfanilamide in the blood reaches a peak at about 2 hours. The percent conjugated was 8.4 at 2 hours, 10.8 at 4 hours, and 16.8 at 6 hours. Similarly the O_2 capacity showed a reduction of 1.50 Vol. percent at 2 hours, 2.21 Vol. percent at 4 hours, and 1.45 Vol. percent at 6 hours.

The effects of the combination of sulfanilamide with the detoxifying chemicals are presented in Table C. It may be seen that there is a considerably greater amount conjugated with the acetyl radical in the 2, 4 and 6-hour specimens and simultaneously there was less change in the O_2 capacity of the blood.

This would indicate that less of the hemoglobin had been changed to methemoglobin, and would confirm the clinical observation which indicated a lesser degree of cyanosis when the detoxifying chemicals were administered.

Blood methemoglobin was analyzed after the administration of sulfanilamide alone and in combination with detoxicants. Sulfanilamide alone resulted in the appearance of 19.2 percent (8 patients) methemoglobin 6 hours after medication, while the blood methemoglobin after sulfanilamide combined with detoxicant chemicals was only 6.9 percent (5 patients).

TABLE B

The Effect of 3.25 grams (50 gr.) of Sulfanilamide Administered Per Os.

Pt.	Volumes O_2 Capacity Before	2 Hrs.	4 Hrs.	6 Hrs.	Changes O_2 Capacity 2 Hrs.	4 Hrs.	6 Hrs.	Total Sulfanilamide (mg. %) 2 Hrs.	4 Hrs.	6 Hrs.	% Conjugated of Total 2 Hrs.	4 Hrs.	6 Hrs.
1	16.4	16.4	11.2		0.0	-5.2		4.5	4.0	3.3	12.1	20.5	23.8
2	21.0	18.6	13.5	14.3	-2.4	-7.5	-5.7	4.6	5.1	4.3	9.9	9.7	9.3
3	19.3	17.3	19.2	20.1	-2.0	-0.1	+0.8	4.0	3.2	2.6	12.5	6.7	15.7
4	18.3	15.3	15.6	16.8	-3.0	-2.7	-1.5	3.5	3.4	3.2	0.0	10.1	13.5
5	14.3	13.7	13.7	12.7	-0.6	-0.6	-1.6	4.0	3.5	1.0	15.0	16.9	20.0
6	16.4	16.1	16.0	16.6	-0.3	-0.4	+0.2	0.5	1.5	1.4	15.1	24.2	26.0
7	18.3	17.3	15.0	16.9	-1.0	-3.3	-1.4	3.0	2.8	2.8	0.0	7.1	14.2
8	20.4	17.3	18.1	19.0	-3.1	-2.3	-1.4	3.7	2.9	2.8	5.3	0.0	12.1
9	17.8	16.4	15.6	17.1	-1.4	-2.2	-0.7	5.2	5.0	4.0	5.7	1.9	11.6
10	18.0	17.7	17.0	16.8	-0.3	-1.0	-1.2						
11	16.6	15.8	16.7	16.4	-0.8	+0.1	-0.2						
12	19.9	18.8	16.4	17.7	-1.1	-3.5	-2.2						
13	18.6	16.0	16.1	16.3	-2.6	-2.5	-2.3						
14	17.6	15.4	15.5	14.4	-2.2	-2.1	-3.2						
15	18.3	16.6		15.9	-1.7		-2.4						
16	18.5	16.9		16.9	-1.6		-1.6						
AVERAGE					-1.5	-2.3	-1.5	3.8	3.5	2.8	8.4	10.8	16.8

Discussion

After the administration of sulfanilamide, the drug has been shown to be present in the body fluids as such or as acetyl-sulfanilamide (the conjugated form). There is a considerable variation in the amount of conjugated sulfanilamide formed, but as a rule it ranges from 10 to 20 percent of the total amount of sulfanilamide in the blood (4, 5). Conjugation of the sulfanilamide apparently occurs in the liver (7), and the process has been shown to be reversible.

After the administration of acetyl-sulfanilamide to animals the free sulfanilamide can be determined in the blood (6). It is generally felt that the therapeutic effect in bacterial infections is dependent on the free form of sulfanilamide and not on the acetylated form. The toxic effects of sulfanilamide administration have been shown to be due to both the free and the acetylated forms. From our own observations it appears that the simultaneous administration of detoxifying chemicals increases the percentage of sulfanilamide acetylated.

One of the principal toxic symptoms of sulfanilamide administration is the cyanosis which occurs in the majority (90 percent to 100 percent) of patients receiving the full dosage. The incidence and intensity of the cyanosis is not related to the dosage, though in general the larger the dose the more likely is the appearance of the cyanosis.

Dyspnea may occasionally accompany the cyanosis and may be due to the impairment of the O_2-carrying capacity of the blood. Ordinarily the clinical appearance of the cyanosis is far in excess of the dyspnea. In a large percentage of patients methemoglobin has been found to be present in the blood, causing the cyanosis. Occasionally sulfhemoglobin has been reported to be present after sulfanilamide administration.

The investigations of Wendel (9, 10) have shown that the methemoglobin is the major abnormal pigment formed and is the most important cause of the cyanosis. The results of Wendel are in contrast to some of the previously reported studies and he attributes his unusually high percentage of positive findings of methemoglobin in the blood to the fact that this method was sensitive to +3 percent, while the previous workers were under the handicap of requiring levels as high as 20 to 30 percent for their results to be significant.

These results have been subsequently confirmed by numerous investigators. Wendel and his coworkers have employed methylene blue to avoid or abolish the sulfanilamide-induced methemoglobinemia by converting the oxidized pigment to ordinary

TABLE C

The Effect of 3.25 grams (50 gr.) of Sulfanilamide plus 3.25 grams (50 gr.) of Detoxifying Chemicals Administered Per Os.

Pt.	Volumes % O_2 Capacity Before	2 Hrs.	4 Hrs.	6 Hrs.	Changes in O_2 Capacity 2 Hrs.	4 Hrs.	6 Hrs.	Total Sulfanilamide (mg. %) 2 Hrs.	4 Hrs.	6 Hrs.	% Conjugated of Total 2 Hrs.	4 Hrs.	6 Hrs.
1	15.8	15.5	14.8	15.5	-0.3	-1.0	-0.3	4.4	4.2	3.5	16.2	23.8	28.6
2	18.9	18.0	14.4	17.5	-0.9	-4.5	-1.4	5.2	4.8	4.1	19.2	23.2	26.8
3	19.3	18.7	19.0	18.5	-0.4	-0.3	-0.8	4.2	4.2	3.6	00.0	17.9	14.8
4	16.3	14.2	15.5	15.0	-2.1	-0.8	-1.3	1.6	1.6	1.3	15.7	26.2	26.0
5	18.8	18.4	16.4	16.6	-0.4	-2.4	-2.2						
6	20.3	19.4	18.0	19.8	-0.9	-2.3	-0.5						
7	18.3	19.1	17.7	18.1	+0.8	-0.6	-0.2						
8	18.6	19.0	17.8	18.5	+0.4	-0.8	-0.1						
9	18.7	17.5	17.3	18.1	-1.2	-1.4	-0.6						
10	19.0	18.4	—	17.3	-0.6	—	-1.7						
11	20.7	20.7	20.0	19.4	-0.0	-0.7	-1.3						
12	20.4	17.2	17.4	16.4	-3.2	-3.0	-4.0						
13	18.8	19.6	18.9	19.9	+0.8	+0.1	+1.1						
AVERAGE					-0.6	-1.4	-1.0	3.8	3.7	3.1	12.8	22.8	24.0

hemoglobin. The rationale for this therapy is dependent on the fact that oxidation-reduction substances will convert methemoglobin to oxidized hemoglobin. Methylene blue has been used intravenously to alleviate the appearance of cyanosis following sulfanilamide therapy (8).

The favorable effect of cysteine in the reduction of methemoglobin in the rabbit was probable in view of the results of Morrison and Williams (11), who demonstrated that both glutathione and cystine were efficient within physiological pH range in reducing methemoglobin to hemoglobin. Vestling (12) found that ascorbic acid, alone and in conjunction with methylene blue, was highly efficient in the reduction of methemoglobin. Gibson (13) confirmed this in vitro work. This finding is in agreement with our observations on the efficacy of ascorbic acid in reducing methemoglobin or preventing its formation in the sulfanilamide-treated rabbit.

Summary

Using a combination of physiological detoxifying agents (glucuronic acid, ascorbic acid, cystine, glycine, and choline), it has been found possible to reduce materially the methemoglobin formation resulting from sulfanilamide therapy. This combined treatment resulted in increased acetylation of sulfanilamide.

In the rabbit, ascorbic acid and cysteine were found particularly effective in reducing methemoglobin or preventing its formation. Cystine, calcium glucuronate and choline chloride exerted a weak action of this type.

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ILLUSTRATION OF A "SINGULAR" TRAUMATIC LESION OF THE TIBIA

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"Singular" is what this author calls the traumatic lesion of the tibia under description but, from the diagnostic point of view, it could be called *new*, because neither in the national nor in the foreign literatures of bony lesions is there a single transcribed case that had with it any analogy.

G. P., male, of 56 years of age, of athletic constitution, one night on returning home, stumbled with his foot and fell on the ground, strongly striking the left leg against a stone. He felt a sharp pain in the entire limb, but was able to get up by himself and walk for about 100 yards to reach the house.

A doctor diagnosed a simple contusion of the tibia and ordered rest in bed and cold packing with lead water.

In three days the light swelling disappeared, remaining only an ecchymotic coloration of the skin. But the pain, that seemed in the beginning relieved, toward the fourth day, changing character, as the patient said, became continuous, as an internal pain, growing and growing to a very distressing stage.

Resisting to all local and general treatments, only after two weeks started to decrease, but always remaining continuous in a certain degree and always exacerbating at each attempt to walk.

His physicians at last convened that the pains were of arthritic nature, chiefly when other pains appeared on the knee, the hip, the lumbar region and also on the leg of the other side.

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After three months of unsuccessful treatments, they referred the patient to a surgeon who, not finding by fluoroscopic examination any lesion on the bony structures of the leg, confirmed the diagnosis of arthritis and sent him back for medical treatment.

Then he came to me. I was impressed with his peculiar walking gait: the left limb in complete extension and abduction, touched slightly the floor at each step and he proceeded jumping on the right limb in manner to avoid any weight on the left because, he said, when in erect position he felt a sensation as though the leg were breaking out. He never had fever.

The complete physical examination, especially of the left leg, in regard of the bony structures, was negative. Deep palpation on the tibia gave little external pain, absolutely different from the subjective, intense, internal pain claimed by the patient.

The Wassermann was negative; also negative was the skin-reaction; the examination of the urine showed a deep urico-ossalic diathesis.

Without any great hope, I sent the patient for a radiologic examination and never, I think, a radiography was so successfully and so usefully made.

At first sight, it showed a tibia and a fibula perfectly normal, but on a more detailed observation, it is seen (fig. 1) that the clear shade of the medullary canal, at his middle third, was partial narrowed by another irregular, triangular, darker shade with the base on the right and the apex toward the left walls of said canal.

Fig. 1

And as this abnormal condition was just on the seat of the trauma, even in the impossibility of stating the real nature of the lesion, I had no doubt that it was the cause of the suffering of the patient, and I suggested an operation, which was willingly accepted by him.

With a longitudinal cut of four inches on the middle third of the tibia, I reached the "normal" periosteum, that I incised for the same length and easily detached from the "normal" bone. With a chisel I proceeded to carve it and, when a first little slit opened the medullary canal, violently spurted out a jet of dark, bloody fluid that gave me the satisfaction of a correct diagnosis.

Opening for all the length the discovered bone, I found among a mass of degenerated, bloody marrow, two eroded, friable splinters of bone, detached from the wall of the canal. Curetting all the necrotic material till normal marrow is reached above and below, I packed with sterile gauze the profusely bleeding cavity.

The pains of the patient suddenly ceased and after a normal postoperative course, he left the hospital completely cured—44 days after the operation.

The microscopic examination of the bony splinters showed "ischemic necrosis".

Nineteen months after his recovery, while under the influence of alcohol, the patient jumped from the second floor of his home, landing on the street, fracturing his right leg, which ultimately also healed without having caused any damage to his left leg, on which is seen (fig. 2) the old operative scar.

Fig. 2

The lesion can be classified in the chapter of partial splintered fractures—(fractures esquilleuses du Malgaigne)—with the name of *internal partial splintered fracture of the tibia.*

Such fracture, as I said, from the standpoint of the diagnosis is absolutely new in the literature of traumatic bony lesions, but it is probable that some

other similar cases have occurred in the long bones and they were not diagnosed, or because spontaneously healed for their levity, or because, masked by superposed septic complications, were diagnosed as common osteomyelitis, remaining unknown the initial traumatic lesions.

What remains obscure in this case is the mechanism of production of such fracture: namely, if the bony splinters were detached by direct transmission of the vibrations of the trauma from the external to the internal layers of the bone, as occurs on the "vitrea" in certain contusions of the cranial bones, or with the mechanism of the violent, forced flexion of the bone, not so valid to break it, but sufficient to detach splinters from the internal surface of his medullary canal.

However, the uncertainty of the mechanism of production will not interfere with the essence of the lesion in itself, that from now on, enters in the literature of traumatic bony lesions with clear and precise own characters: "splintering of the internal walls of the medullary canal of long bones" with more or less hemorrhage and damage of the marrow.

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EXPERIENCES IN RELIEF OF COUGH BY USE OF AN ORALLY INHALED ALIPHATIC AMINE

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Cough associated with upper respiratory infections is one of the most frequent symptoms encountered in the Boston University Health Service during the fall and winter. The available methods for treatment of this troublesome complaint are not entirely satisfactory; commonly employed cough remedies are not uniformly effective, and for ambulatory patients attending classes they are not convenient to use.

A new method for the treatment of cough became available for study during the fall, winter and early spring of 1945 to 1946. This method employed both a new drug and a new technique of administration, designed to relieve coughs by local therapy. The agent, 2-amino-6-methylheptane, had been shown to produce analgesia in animals when introduced parenterally, and topical application of its vapor to the eyes for a few seconds was reported to give complete local anesthesia for twenty minutes in laboratory tests (1).

In man, application of 2-amino-6-methylheptane to the nasal mucosa produced a vasoconstrictor effect (2). Extensive toxicity and histological studies indicated its safety for use (1, 2, 3, 4). The drug was made available in a small tube from which the vapor could be inhaled through the mouth directly into the throat and lungs.*

Methods

Each student or university staff member reporting to the Student Health Service for treatment of an upper respiratory tract infection in which cough was a factor was given one of four types of tube. Twenty-six patients received tubes containing 250 mg. of 2-amino-6-methylheptane, plus a like amount of phenyl ethyl alcohol and anethol (anise flavoring); twelve received tubes containing 500 mg. each of the amine, the alcohol and anethol; and six were given tubes containing 1 mg. of the amine alone.

As a control series*, seven patients were given tubes containing 1 cc. of eucalyptol. This drug was chosen for the study because of its traditional use as an inhalant to relieve congestion and cough, conditions for which the Oralator was produced; a comparison of the two agents seemed to offer the most rational means of evaluating the new chemical. All tubes were identical in appearance, except for the code numbers.

The patients were instructed to close the lips firmly over one end of the tube, inhale gently twice, and then take 4 to 6 deep breaths through the tube directly into the lungs, holding each breath for several seconds. This treatment was to be repeated whenever necessary.

Each patient was provided with a chart on which to record frequency of use, effectiveness, duration of relief obtained, and comments on odor, taste, convenience, etc., of this new form of therapy. Patients were also asked to report undesirable effects, if any should occur: gagging, initial cough reflex, and burning sensation in throat and lung were listed on the chart as possible side reactions to watch for. The physician's diagnosis, etc., was noted on a second chart for each case treated.

* This preparation is available as Eskay's Oralator from Smith, Kline & French Laboratories, Philadelphia, Pa.

* All "control" observations, unfortunately, were made in autumn months at the beginning of the investigation, while most "experimental" cases are dated in winter and early spring. Another chance of systematic error derives from the difference in flavoring between control and experimental Oralators.

Results

Table I
Changes in Severity of Cough Following Use of Oralator Amine

Group	Relief: Marked No.	Marked %	Moderate No.	Moderate %	None No.	None %	Worsening of condition No.	Worsening of condition %
Flavored amine (250-mg.)	19	73	2	7	3	11	2	7
Flavored amine (500-mg.)	8	66	2	17	2	17	0	0
Amine alone	5	83	1	17	0	0	0	0
Control (1 cc. eucalyptol)	4	57	3	43	0	0	0	0

Relief was considered "marked" if the patient experienced unmistakably decreased or abolished cough. "Moderate" relief consisted of decreased pain, altered character and amount of sputum, "loosening" or other improvement in the quality of the cough, decreased frequency or intensity, or lessened throat "tickle".

Results with the tubes containing 2-amino-6-methylheptane showed that approximately 73 percent of the subjects obtained "marked" relief, and highest effectiveness—83 percent "marked" relief—was reported by the group treated with the plain, unflavored amine. This seems a significantly higher percentage than the 57 percent of controls who obtained "marked" relief by using tubes containing eucalyptol.

Analysis of the results according to diagnosis of individual cases showed that the Oralator was about equally effective against all conditions treated in this series:

Table II
Changes in Severity of Cough Treated With Oralator, According to Diagnosis

Diagnosis	Cases	Relief: Marked No.	Marked %	Moderate No.	Moderate %	None No.	None %
A. Tracheitis	17	11	65	5	29	1	6
B. Tracheitis, with coryza and/or rhinitis	9	6	67	0	0	3	33
C. Pharyngitis and/or laryngitis, usually with tracheitis, coryza or rhinitis	12	11	92	0	0	1	8
D. Bronchitis, alone or with other involvement	4	3	75	0	0	1	25
E. Tonsillitis, with other involvement	2	2	100	0	0	0	0

Of the seven controls using the eucalyptol-containing tubes, 1 in classification B reported "marked" relief; 2 in classification C reported "marked" relief; 1 in classification D reported "marked", and 3 "moderate" relief.

Most patients noted improvement in their condition for one-half to one hour after a single application of the Oralator, though a few subjects (three out of the thirty who reported on this question) stated that its effect lasted only fifteen minutes. On the other end of the scale, seven patients reported much longer periods of relief, ranging up to four hours.

Mean duration of treatment was 3.9 days. The total number of individual treatments (which in some cases were as frequent as 8 to 10 daily) ranged from 5 to 78 (mean, 22; median, 25).

Of the unpleasant side-effects reported, taste and/or odor was the chief complaint. Five patients reported gagging, though this usually disappeared after the first or second treatment; three reported an initial cough reflex; a combination of these two reactions occurred in four cases. Four patients experienced a burning sensation in throat or chest. All these effects (which were listed on the chart) were reported, as well, by one or another of the controls. Three subjects (one of whom belonged to the control group) complained also of nausea.

Many patients, including some of those who recorded the side-effects above, were enthusiastic about the convenience of this form of therapy. Unlike other cough remedies, the Oralator could be used unobtrusively in crowded or quiet places such as classrooms, lecture halls, and libraries.

Summary

Local therapy of coughs by oral inhalation of a new chemical, 2-amino-6-methylheptane, gave "marked" relief in 73 percent of 51 cases of cough associated with upper respiratory infection. The volatile amine was incorporated in a small tube, from which it could be inhaled directly into the throat and lungs. The effectiveness and convenience of this new form of cough therapy seem to warrant further clinical trial.

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VALUE OF PHYSICAL THERAPY AS AN ADJUNCT FOR THE AGED

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At the beginning of the twentieth century about 5 percent of our population were over 65, and 18 percent were 45 years of age or older; today 6.8 percent are over 65, and 27 percent are 45 years of age or older. In the United States now there are actually 6,000,000 more persons who are 65 years of age or older than there were in 1900, and it is estimated that by 1980, the total number of those in this age group will be 22,000,000.

Two important causes for this population trend are the marked fall in the birth rate, which has

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dropped more than a third in the past forty years, and the sharp drop in immigration of young adults. At the same time there has been a great increase in the mean life span; that is, in the average expectation of life at birth.

Physical therapy has been proven a valuable adjunct to medicine and surgery in the diagnosis and treatment of disease and injury at all ages. Its greatest value in chronic and disabling diseases is from a recuperative and rehabilitative standpoint. The importance of correct diagnosis in the period of senescence must be stressed more than in any other time. Greater care and judgment in the use of the proper physical therapy measures and technique must be taken into consideration. The dryness and loss of elasticity of the skin and of the tissues with increased resistance to the passage of electrical currents is more evident at this time. The circulatory depression, the brittleness of bone, the peripheral vascular blocks, loss or diminished sensation in the sensory nerve ends of the skin, all must be remembered in selecting the proper type of physical therapy measure that is indicated and carrying out carefully the correct technique in its application. Constant supervision, observation, and questioning while the patient is under treatment is imperative. Proper dosage and duration of treatment must be ascertained. This will help to prevent severe reactions, overcome idiosyncracies that may result in untoward symptoms, injuries, or burns to the tissues.

If all precautions are taken with proper understanding of the physiopathological changes underlying the conditions in this select group, and the correct diagnosis and indication for treatment is present, favorable results shall have been attained. It is important to maintain mobility and preserve circulatory balance, and to instill a sense of well being and a zest for living.

During my twenty five years of private practice, an association with an aged home, a state mental hospital, a municipal hospital, and in an industrial practice, I have had the opportunity to evaluate physical measures as an adjunct in Geriatrics. I do not intend to delve into the theory and basic sciences underlying their use, nor to go into the special skilled techniques, but rather to briefly summarize various conditions common to that age group and physiological indications for the use of the various modalities.

My observation has proven that physical medicine is a great aid in the relief of pain and disability in their mental and physical rehabilitation. Such measures properly indicated, correctly and carefully applied, have made this branch of medicine and surgery a worthy partner.

Cardio-Vascular Diseases

Hypertension, Autocondensation: Saturation. With this form of treatment, the heat generated in the tissues produces a dilation of the superficial capillaries, peripheral pressure is lessened; thus accounting for the immediate drop which occurs after such treatment. If heat alone were the answer, greater improvement should take place under direct diathermy, which is not the case. In patients with low basal metabolism, the metabolic rate progressively increases under autocondensation. It has a marked effect on increasing the urinary solids.

These effects can only be accounted for by "apparent" stimulation of the sympathetic nervous system. It is known that the nerves of the ear and eye are tuned to respond to certain wave lengths, vibrating at a certain speed. It is also known that high frequency currents do not stimulate the motor or sensory nerves. Is it then too much to assume that when the entire body is placed under a constant charge and discharge of numerous types of wave lengths, vibrating at many different frequencies, in addition to internal generation of heat, may there not take place stimulation of the sympathetic nervous system? It appears to us that the relief can only thus be explained.

Peripheral Vascular Diseases

Electrical Measures, Diathermy and Galvanism, Whirlpool Baths, Exercise: These modalities are used to relieve pain and spasm, and to bring about active hyperemia and better nutrition. Where diathermy is not tolerated well at first, warm whirlpool baths may be employed. Postural exercises as recommended by Burger should be carried out in every case of endarteritis or thrombo-angiitis obliterans. The vacuum suction boot or alternate pressure cuff has also proven of value. If the process is too far advanced as shown by absence of pulsation in the arteries of the extremity or failure of return of collateral circulation or uncontrollable pain, the prognosis of recovery is unfavorable. Any local treatment other than surgery will prove of no avail.

Varicose and Indolent Ulcers—Bed Sores

Zinc and Copper Galvanic Ionization, Static Brush Discharge and Ultra Violet Irradiation—Radiant Heat: The poor circulation present together with stasis and superimposed infection are the underlying factors that must be taken into consideration. Zinc and copper ionization properly applied result in a sterilization and cleansing of the tissues. A coagulating slough is produced, which when removed leaves a clean granulating base.

Static brush discharge stimulates healing and granulations and produces relief from pain, irritation, and edema. Before the advent of ultraviolet radiations, static electricity served the purpose very satisfactorily. The above treatments do not interfere with any or all other forms of indicated therapy.

Early Varicose Veins

Diathermy, either Long or Short Wave, Low Frequency Currents, Exercise: All underlying ethiological factors must be considered and wherever possible concentrated upon. The above measures have proven valuable in the improvement of circulation and nutrition. They helped to relieve stasis, edema, to increase the strength of the surrounding musculature, and to increase or renew the elasticity of the vascular wall. When the condition is much more progressive and the veins reach a stage of marked dilatation with absolute loss of mechanical support,

resulting in swelling and breakdown of tissues bordering an ulceration, then more drastic measures are indicated.

Gastro-Intestinal Tract

Chronic Cholecystitis, Diathermy—Long or Short Wave: In chronic low grade inflammatory conditions of the gall bladder and the biliary tract which may or may not be associated with the formation of gall stones, diathermy has proven to be an important adjunct to dietetic and medicinal regimes. The deep heating promotes the resorption of inflammatory products and the flow of bile; it relieves congestion and at the same time acts as a sedative and anti-spasmodic.

Our clinical experience and of others has shown that in recurrent attacks of pain or infection without obstruction, the above measures in many cases have reduced the duration of the attack and have eliminated the necessity of the use of large doses of narcotics.

Gastric Neuroses

Diathermy, Galvanism, and General Ultra-Violet Irradiations: These conditions are usually of functional nature and may be of either sensory or motor type, or both combined. They may be accompanied by nervous vomiting, hyperacidity, and hypersecretion. No true organic changes have been demonstrated. Therefore, the treatment of the general nervous condition is imperative and will result in the improvement of the local gastric disturbance.

Diathermy tends to improve local circulation, relieve stasis, muscle spasm and irritability, and tends to reduce in many cases the hyperacidity and hypersecretion. It acts also as a nervous sedative. As an alternate measure, or in addition to diathermy, galvanism has proven of value. General ultraviolet irradiation is made use of for its tonic effects and for the improvement of the calcium and phosphorous metabolism and as an aid to the recovery from an underlying secondary anemia.

Constipation (Atonic) Atonic Dyspepsia Visceroptoses

Diathermy—Long or Short Wave, Low Frequency Currents, Stimulation Exercises: All have the following features in common:—Dysfunction, lack of tone of the musculature of the stomach and intestines, and often weakness of the abdominal walls. Purpose of the treatment is to overcome that weakness, improve the strength and tone of the muscles, and increase peristalsis.

Genito-Urinary Diseases

Benign Prostatic Enlargement—Chronic Prostatitis, Diathermy, Massage, Hot Sitz Baths, Modulated Sine Current, Static Wave Current: One of the most frequent troubles in men over fifty is prostatism, a disturbance in the function of the prostate which is apparent because of the following symptoms:

Slow and frequent micturition, dribbling, frequence and nocturia. General symptoms: Debility, loss of sleep, loss of memory, chronic constipation, and impotence. There is up to date histological and pathological evidence for the fact that in many cases, the so-called enlargement is only inflammatory enlargement (old infection, stasis, sedentary habits). Our empirical experience has corroborated the fact that some cases of hypertrophied prostate are relieved by physical measures especially where congestion and edema are superimposed on the underlying simple hypertrophy.

Diathermy produces active hyperemia with improved circulation, relieving congestion, edema, and pain. The lower frequency and static wave current properly applied and mechanically controlled gives very rhythmical, painless, soothing massage, superior to the usual finger massage.

We have seen many elderly patients get relief after the first treatment and get a so-called "new lease on life." When disturbing symptoms arise after a series of treatments, then a repetition of the course may be tried or an occasional treatment applied. Another advantage of this treatment is the opportunity for close watch of the patient, in order to forsee and many times prevent complications. Lack of prompt and progressive improvement after a course of treatment has been completed, as judged by subjective symptoms, the amount of residual urine present, or evidence of infection, is a definite indication that the underlying pathology is of a much more serious nature. More radical measures like prostatectomy, classical or by electro surgery are then necessary. In continence of urine, pre or post-operative, due to loss of bladder or vesicle sphincter is improved by the use of properly indicated physical measures.

Spasm of Ureter With Renal Stone

Diathermy—Long or Short Wave: Ureteral relaxation with relief of excruciating pain and ureteral spasm accompanying the attempted passage of a renal stone has been accomplished by the use of these measures.

Gynecological, Uretheral Caruncle, Cervical Erosion, Chronic Endocervicitis, Electrodessication: A common discomforting condition present in many elderly women, pain, irritation, burning, frequency of urination, dysuria and in many cases incontinence.

In many cases no anesthesia has been necessary. In a small group, a topical anesthesia for a few minutes was sufficient. The procedure is simple, painless, bloodless, and ambulatory with very little or no after affects. Correctly and thoroughly done will result in cure of most cases in about seven to ten days after only one treatment.

Cervical Erosion, Electro Coagulation—Dessication: The important thing is to rule out malignancy by proper examination and technique. When discomfort and discharge from irritated cervical glands persists, electro surgical procedures may be very carefully carried out in the office or even the home of the patient, under topical anesthesia. Our results have been very satisfactory.

Chronic Endocervicitis, Surgical Diathermy, Copperionization: This condition as we all know is extremely resistant to most topical applications including irrigations. After diagnosis has been established

and malignancy ruled out, electro surgical destruction by means of electro coagulation or cutting current has definitely proved its value. One must be certain that the indications for electro therapy are present and the proper technique is applied.

Copperionization (Galvanism): This is an efficient and simple method very well suited for ambulatory treatment. Antiseptic and astringent ions of copper and copper oxychloride are deposited deep in the tissues of the cervix. In well selected cases only one treatment is necessary and the condition is usually cleared up in ten days or two weeks.

Diseases of Bones and Joints

Gout, Osteoarthritis, Rheumatic Arthritis, Fibrositis, Myositis, Bursitis, Stiff Joints, Radiant Heat, Diathermy, Iontophoresis, Low Frequency Currents, Static, Wave, Massage, and Exercises: All above measures properly indicated and applied in selected cases will result in considerable relief from pain, stiffness, muscle spasm, and atrophy. In most of our patients it has reduced the necessity for the use of large doses of sedatives or narcotics. The physiological effect of treatment is an improvement in circulation and nutrition of the affected parts together with the removal of the exudate, relief of pressure on sensory nerve ends, increased mobility of parts, prevention of atrophy or muscular contractures with increased tonus in weakened muscles.

Skin

Roentgen Rays, Radium, Grenz Rays, Ultraviolet, Surgical Diathermy, Foruncles and Carbuncles: Filtered roentgen rays one-half erythema dose properly and skillfully applied sometimes in one treatment have resulted in resolution of the infection at the end of about three days. If no results occur at the end of that time, certainly other measures are indicated. Again this treatment is not incompatible with any or all other treatment procedures—medical, surgical or biotic.

Keloid: Roentgen rays or radium usually affect a cure. Occasionally larger involved areas require excision with the cutting current followed by irradiation.

Favus of Scalp and Tinea Capitis: Roentgen rays (Epilating dose) unfiltered. In about ten weeks the hair returns. We have had no permanent alopecias or recurrences in many hundreds of cases treated.

Epithelioma, Basal Cell Type, Roentgen rays. Radium, Electro Coagulation or Cutting Currents: Prickle cell type—Electro surgical cutting current followed by irradiation with radium or emanations or implantation of radon seeds—roentgen therapy to associated glands.

Keratoses (Senile) Electrosurgical—Coagulation or Cutting Current Erysipelas: More common in decade between 60 and 70 than in any other if morbidity is estimated by age specific rates. Ultraviolet irradiations four to ten erythema dose will arrest progress in 24 to 48 hours—almost a specific in this particular dangerous skin condition.

Diseases of the Nervous System

Hemiplegea, Peripheral Paralysis, Paralysis Agitans, Involutional Melancholia; Radiant Heat, Diathermy, Iontophoreses, Massage, Reeducational Exercises, Rehabilitation, Electric Shock Therapy; Hemiplegea: Always bear in mind underlying cerebral pathology. As soon as the shock of the original incident is over and the patient has passed the days of further complications, the condition has become stationary (from a few days to about a week after the cerebral hemorrhage has taken place.) A plan must be laid out for proper support in proper position for paralyzed limbs to prevent deformity and contractures. The circulation, nutrition, and muscle tone of the effective limbs must be kept up, stimulating the protagonist group and relaxing the antagonist group of muscles, together with prevention of over stretching of paralyzed muscles.

Paralysis Agitans: Considerable relief from muscular rigidity, slight improvement in motion and sedation has been accomplished with physical therapy measures like radiant heat and diathermy.

Involutional Melancholia: Especially mania depressive types with extreme grief or suicidal tendencies—Electro Shock Therapy.

Advantages

1. Instantaneous loss of consciousness.
2. Patient suffers no unpleasant memories (Amnesia).
3. Better cooperation on follow up treatments.
4. Convulsions produced comparable to that of metrazol or insulin.
5. It is adaptable to patients with difficult veins to reach or where fibrosis or obliteration of vessels have taken place because of repeated metrazol or insulin injections.
6. No psychomotor excitement, fear, headache, nausea, vomiting, or loss of sphincteric control.
7. No irreversible damage or sequele have been demonstrated in brain or nerve tissue.

There is no doubt that with the accumulated experience to date that a new instrument from a physical therapy standpoint has been added to the armamentarium of the treatment of psychosis. In addition it is important to supplement psychiatric treatment of patients with functional neuroses, or true psychoses, by supplying outlet for excessive drives or by rekindling interest in living through suitable recreational and vocational therapy.

This short paper has tried to give you a general, yet a clear and concise summary of the value of physical therapy in the aged. In conclusion, it must be said that first of all we should be physicians in the full sense of the word with minds open where merit really exists, and employing in the broadest sense any measure that has withstood the test of critical examination; whether it be diet, hygiene, surgery, psycho or physical therapy, or other methods alone or combined. There is no place in the field of medicine for the cultist who with narrow vision practices only one unit of therapy without regard for the merit of all others.

It is the duty of every graduate of medicine

worthy of the name whether in general practice or in some special field of work to make it his business to carefully examine all with an open unprejudiced mind, then to separate the chaff from the wheat and classify the good, indifferent, and bad, thereby giving his patients the benefit of all which has proven worthy, and eliminating from practice all that is useless or harmful.

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PROPYLTHIOURACIL IN THE TREATMENT OF THE ANXIETY STATE

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Emotionally conditioned diseases lend themselves only poorly to the usual drug therapy because of the inherent factors causing them. Sexual maladjustments, inability to cope with the difficulties of a competitive society, environmental stress and the like cannot be overcome by a chemical or a combination thereof. Yet some of the ensuing symptoms such as dysfunction of an organ or organ system become amenable to treatment. To mention a few: Hypertension—vasodepressants, spasticity of intestinal tract—antispasmodics, excessive perspiration—atropine, etc. Here we deal with readily recognizable entities easily verified by routine laboratory procedures.

There are a variety of distressing symptoms, however, not confining themselves to one organ system which present a veritable crux to the physician. The inability to relax, fatigue, jitteriness, insomnia, etc., characteristic of the anxiety state will not respond to bromides, vitamins, tonics and the like, as the disappointed patient will readily relate to his physician.

To establish a rational approach to a successful treatment we have to take into consideration the mechanics of an anxiety state. Its original biologic purpose enables an animal to react to a dangerous situation by a complex rearrangement of the entire body functions. The flow of blood is diverted from the viscera to the skin and muscles resulting in a greater tonus of the musculature; sharper perception of the sensory organs; stimulation of the sweat glands to drain off excess heat; heart and lungs show increased activity to supply more oxygen to the periphery; a higher pressure in the arterial system will add to an already improved blood supply; more sugar is made available for fuel and energy-needs of the muscles. All of which will set in operation an accelerated reaction. Either the animal will fight or flee. In doing so all the accumulated energy will be consumed. Once the dangerous situation is removed the body functions return to normal.

To a large extent this set of reactions can be duplicated by an independent stimulation of both the thyroid and adrenal gland. It seems quite obvious that these two glands are an important intermediary link between the hypothalmus as the instinctual center and the periphery as the effector organs. By pouring into the bloodstream the internal secretions with their characteristic biologic properties both the adrenal and thyroid transmit the original impulse to the entire body.

In human beings the aforementioned reactions will only rarely take place because of inhibitory interferences. Danger will not be recognized as such by our intellectual sphere, while emotionally it may carry all the weight of a dangerous situation, for instance the lack of security by a threatened loss of a job; or if recognized the proper sequence of muscular activities are not permitted to take place.

Education and experience have taught us that certain impulses cannot be given free rein because an ever greater danger to our sheltered existence may thus result. Unfortunately the instinctual stimuli cannot be prevented from reaching the effector organs. In the evolution thus far, man has not yet been able to limit at will the spreading of an unpleasant experience from the sensory to the motor system. We learned, however, to inhibit the originally intended action. Large quantities of energy are thus freely floating in the human organism with no possibility of either a proper outlet or a complete consumption. Muscles are kept in a useless state of increased tension vainly waiting for the contractions to burn up the accumulated energy.

The increase in blood pressure and the higher pulse rate serve no biologic purpose, the resulting changes in the walls of the vascular system are one

of the many penalties man has to pay for being a civilized animal. The diminished blood supply to the viscera will lay the stomach mucosa open to the chemical effects of both pepsin and hydrochloric acid. The permanent increase of the blood sugar level, localized hyperemias of skin with subsequent histological changes, pruritus, excessive perspiration, increased peristaltic activity of the intestinal tract, spasticity of the hollow organs are some more effects of the inhibitory function of our forebrain.

Considering the above facts it becomes evident that either partial or a complete elimination of the thyroid effect will materially alter not only the animal reaction to sudden changes but also the human response to a deepseated anxiety. In a somewhat different form this thought led to the advocation of the surgical removal of the thyroid gland in advanced stages of certain heart diseases. The ensuing improvement was assumed to be caused by the elimination of thyroxin, 'the whip of the heart'. The true reason lies somewhat deeper. Most heart diseases with the possible exception of those of infectious origin have their roots in unconscious emotional conflicts. The latter provoke continuous nervous discharges from the hypothalamic region which in turn stimulate the thyroid among other endocrine glands.

With this theory in mind an attempt was made to determine possible changes in the anxiety state by using a chemical neutralization of the thyroid hormone. The drug used was *propylthiouracil.* Thiourea and its derivatives, propylthiouracil being the least toxic, prevent the synthesis of thyroxin. The evaluations of the results obtained did not encounter any difficulties since the patient's description of noticeable changes within his emotional make-up were considered. A few safeguards had to be maintained to make the results as infallible as possible.

Dealing with subjective responses in easily impressed individuals one has to carefully eliminate all possibilities of auto or hetero-suggestion. It is realized that at present no exact scientific approach to emotional disorders in humans can furnish data comparable to animal experimentation. This, however, should not be a deterrent, lest we forget the physician's prime duty is to aid the sick whether he deals with organic pathology or a psychological dysfunction. An acute anxiety state will create just as much apprehension as a perforated vixcus. The patient himself cannot differentiate between either condition; he wants relief from the alarming sensation.

Method of Approach

A careful history was taken from each patient in this series. All the obtainable data was collected relative to physical ailments of the past, detailed family history with emphasis on interfamily relationship, the patient's emotional and intellectual development, sexual relations, etc.

The dominant chief complaint in this series was a state of uneasy tension, inability to relax, restlessness, tendency to change jobs, jitteriness, irritability but no violent temper, tired feeling upon awakening far more so than before retiring, sleep is poor and fitful occasionally interrupted by frightful dreams, fear of disease, especially heart ailments and cancer.

The recent publicity campaigns to call attention to hidden cancer or potential heart sufferers has raised havoc with these patients to an extent which is almost as damaging as if they actually were afflicted with these diseases. Occasional fears of going up or down elevators, riding in subways, high buildings, bridges, etc. The physical disabilities are: Palpitations, belching, sour eructations, nausea, occasional pollakisuria or diarrhea, tightness around the chest giving rise to an oppressive sensation relieved by deep inspiration; tenderness of muscles of neck, lumbar region, less frequent biceps and triceps muscles and gastrocnemius, dizziness which upon closer examination reveals itself as inability for the patient to orient himself properly rather than a tendency to fall.

A distinction was made between anxiety state and anxiety hysteria. In the former the symptoms are present at all times with little tendency to either spontaneous intensification or lessening of the general trend. There is not a noticeable change in the personality of the patient. He is capable of carrying out all the tasks required of him and he is quite successful in hiding his anxiety from the world. In anxiety hysteria the patient is suffering from attacks of dreadful fears (suicide or other forms of unnatural death, insanity, etc.) feeling of "going to pieces", marked depression of spirits, avoiding of company, necessity of giving up the job and also there is a distinct change in the patient's personality.

The physical symptoms are more outstanding and are considered by the patient as the sole cause of all his difficulties. They are: Visceral dysfunction of the hyperperistaltic and hypersecretory type, violent palpitation, crushed feeling in chest with a sensation of oppression in the throat which makes the patient gasp for air, dull sticky pains in the precordial region which do not change the normal pattern of the electrocardiogram, pruritus mostly of the anticubital and genitorectal area, neurodermatitic changes of skin.

Observation of the patient while he is relating his history is revealing. He is ill at ease, sitting erect at the very edge of the chair, his hands are either clasped tightly together or clenched separately into fists. His visit to the physician, against his own wishes, was prompted by the insistence of wife or mother who thought he was suffering from an ailment of the stomach, heart or lungs, as the case may be. When recounting his difficulties the patient exhibits the signs of intense emotional strain. Features are drawn, the forehead broken by deep vertical lines.

To the usual question, "What seems to be the trouble with you?" The patients almost invariably have the same reply: "I don't know what's the matter with me. I am so easily upset over trifles, when I get up in the morning I feel like I have not had a wink of sleep, sometimes I have a funny feeling in my stomach and my heart is so jumpy, etc." In most cases it is not too difficult to find the precipitating causes. The onset of the symptoms are always timed shortly after a marriage, illness of a

parent, death of a close relative, loss of a job, new job, moving to a different town, etc.

We deal here with individuals who were able to make a more or less satisfactory emotional adjustment to their environmental stresses. Then suddenly this carefully balanced situation was disrupted by an event over which the patient seemingly had no control.

The positive physical findings in a patient suffering from an anxiety state are: Hyperactive reflexes, sinusarrhythmia marked after a few deep breaths, moist palmar surface, occasional fine tremor of the skin. Blood pressure is within normal limits with a greater tendency towards lower values. Basal metabolic rates range between —5 to +15.

The patient has sufficient inside to realize that his/her suffering is a "nervous condition" and not a physical ailment. Yet in the back of the mind is the expectation that a visit to the physician will unearth something wrong with one of the organs. He will probably have to take a tonic or vitamins and then he will be all right. Strangely enough most physicians comply with this unspoken request. An intelligent discussion, however, of the patient's emotional background invariably makes him abandon the preconceived idea of a physical illness. The proof lies in his almost inevitable remark, "If there is nothing physically wrong then there is nothing that could help me".

Procedure

The selection of patients for this series was based on the absence of clinical pathology, laboratory findings such as B M R, bloodcount, urinalysis had to be within the normal limits. After establishing the diagnosis of an anxiety state an explanation of the true nature of his complaints was made to the patient. A reassurance was given that there is no cause for alarm, since their complaints are shared by a large segment of our population. A mild sedative was prescribed and the patient instructed to return in two weeks. If at that time no improvement was noticed, a course of prophylthiouracil 25 mgm. twice daily for two weeks was prescribed. Weight, B M R and bloodcount were watched at five to seven days intervals. (SEE CHART)

Table 1—Grading of responses

3 plus	disappearance of all symptoms of anxiety; capable of resisting the average emotional difficulties of the daily life.
2 plus	psychological symptoms improved, but physical complaints still present though less disturbing.
1 plus	generalized subjective improvement, but will relapse under comparatively mild stresses.
0	no improvement.

Table 2—Two weeks treatment with Propylthiouracil

Response	3+	2+	1+	0		Total patients	% response
Number of patients	16	3	5	2		26	92%

Table 3—Patients in whom recent adversities aggravated preexisting anxiety.

Change of job	4
Loss of job	3
Relatives moved in	2
Death of a relative	2
Sickness in family	3
Total	14

Response	3+	2+	1+	0		% response
# of pat.	1	4	6	3		78%

Table 4—Anxiety state complicated by hypertension.

Systolic pressure	# of patients
over 200 mm.	4
175-200	3
150-175	4
Total	11

Response	# of pat.
Both anxiety and B. P. improved	4
Anxiety improved; B. P. unchanged	4
No change in either	3

Table 5—Anxiety with marked physical complaints but no organic changes.

Physical compl.	# of pat.
Dysmenorrhea	4
Menopausal syndrome	5
Gastro-intest. dysfunction	3
Total	12

Response	# of pat.
Both anxiety and phys. compl. improved	3
Anxiety impr.; Phys. compl. unimproved	4
No change in either	5

Physical examination of patients carried under a three plus response showed a marked dimunution of the formerly hyperactive nervous reflexes; tremors when previously present disappeared. The heart rate dropped an average of 10-20 percent. The BMR did not show any significant changes, the highest drop from +15 to —5 occurred in one case. One-third of the patients gained three pounds or more per week, one-third one to three pounds, one-third no increase in weight. The W. B. C. remained essentially unchanged, four cases showed a drop from 8 - 10,000 to 4 - 6,000. The differential blood picture did not reveal any abnormal changes.

Subjective symptoms secondary to either hyperperistaltic or hypersecretory visceral activity were diminished in intensity or disappeared completely. The change in the patients' general condition became quite apparent not only to the physician but also to the patients and their families. The vague and constant uneasiness, irritability, tension, jitteriness and indefinite fears were the first to leave the patient. The feeling of fatigue was seemingly more tenacious and more often than not lingers on despite his general improvement. Objectively one notices at the end of the treatment the patient's relaxed posture in the examining chair.

Reactions of some of the patients after two weeks of propylthiouracil 25 mgm. twice daily are quoted below. The patients were asked to relate any changes they noticed, leading questions were avoided.

Case Histories

Mrs. H. B., 35 years old, married, office clerk; unhappy childhood, economical insecurity. Husband does not have sufficient ambition to provide for the family properly. Chief complaint: Tenseness, jittery feeling all over, uneasy in subways and elevators, poor sleep, irritable, palpitation, occasional pollakisuria and belching. "I sleep much better and feel relaxed. I have more patience with my family. I am not as short tempered. The sound of the telephone or door bell does not startle me".

Mr. R. G., 29 yrs. old, married, engineer; parents divorced, resents interference of his mother-in-law, feels that his talents are not properly recognized. Chief complaint: Restlessness, irritable, insomnia, tightness in throat, at times also in chest, fleeting pain in the back of his head, poor appetite, sexual difficulties. "I found it impossible to work on the drawing-board for more than a half-hour. I simply had to get away even for a few minutes to light a cigarette. I used to smoke one and one-half to two packages a day. Now I don't feel as restless, I can work several hours in a stretch without smoking, which by the way, I have cut down to one-half pack a day".

Mr. J. B., 32 yrs. old, single, salesman. Neurotic mother who dominates the patient. Chief complaint: Sour eructations, belching, very tense when driving his car, his hands getting wet with perspiration, fitful sleep, nightmares, restless, irritable, occasionally had choking sensation in throat, headaches. "I have a feeling of relaxation. The heaviness in my limbs has left me, I can sit through a show without getting restless, noises don't bother me so much. Driving through traffic does not bother me as it used to. I am not as nervous".

Mrs. C. S., 39 years old, married, milliner. Dislikes her job intensely, would like to devote her time to her children, afraid of getting pregnant again, apartment too crowded, little privacy. Chief complaint: Headaches, indigestion, insomnia, tired feeling, irritable, dizzy spells when going up or down in elevators or looking down from high windows, nausea, occasional diarrhea. "My appetite is better, my stomach does not bother me now and I can sleep without taking sleeping pills, I have not had a dizzy spell and I am not as nervous".

The degree of improvement depended on the severity and persistence of the causative factors. The psychological symptoms usually cleared up before the physical difficulties. In some cases the latter persist while the patient will state that he feels a great deal better. The best results were achieved in individuals where the difficulties could be traced to a single factor in the not too distant past.

Of eleven patients in our series having hypertension of varying degrees besides their anxiety states only four responded with a lowering of the blood pressure following the usual two weeks course of *propylthiouracil*. The theoretical consideration in the beginning of this paper was confirmed by the above observation. Factors causing hypertension do not work via the thyroid gland. Obviously this role is reserved for the adrenal medulla.

The more pronounced the physical complaints become in the patient's overall suffering, the less effective will be the effect of propylthiouracil. One cannot help but surmising that emotional disorders converted into visceral dysfunctions become operative through agencies other than the thyroid gland.

For reasons now understandable propylthiouracil was found to be ineffective in patients suffering from the following personality disorders: Neurasthenia, conversion hysteria and compulsion neurosis. No patients with manic depressive psychosis were available for study. It seems feasible that at least the manic phase may yield under the anti-thyroid treatment.

As a passing thought it would be interesting to determine the pathway for the complex emotion of frustration via a possible stimulation of the pancreatic innersecretory organ leading to increased hunger and then in turn to obesity. As yet emotions per se have received only little attention. We are only now beginning to study their effects on the various effector organs.

There is still considerable confusion in this field which as its heading—Psychosomatic Medicine—carries an obvious misnomer: Psyche connotes soul, an abstraction which has no organic substratum. The correct term, taking into consideration the center of instinctual behaviour, should be—Hypothalamo-somatic syndrome. Research into classification, origin and bodily effects of emotions should form part of a new science for which the term "Ptoesiology" is proposed, Ptoesis being the Greek word for emotion.

Summary

1. Propylthiouracil is effective in counteracting all or most of the psychological disorders of the anxiety state.

2. The anti-thyroid action is ineffective in neurosthenia, conversion hysteria and compulsion neurosis.

3. Suggestion is made to change the term psychosomatic diseases into hypothalamo-somatic syndrome.

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RECENT ADVANCES IN ORTHOPAEDIC SURGERY:
New Principles, Some Problem Fractures, Bone Graft Surgery and Cellophane in Orthopaedic Surgery

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NEW PRINCIPLES

The most important advance in *orthopaedic surgery* for many years was the advent of penicillin. It has so reduced the danger of bone and joint infection in elective operative orthopaedic surgery that a great many more procedures are justifiable than before it is used. In compound fractures it has so lowered the incidence of infection that the compound fracture is no longer the great problem it used to be except in the exceptional case. Severe infection with a generalized blood stream infection and the danger of death is now a very rare thing following a compound fracture.

The dose of penicillin is quite variable and in general, the authors employ 25,000 units every three hours for five days postoperatively following major orthopaedic surgery in which the danger of infection is serious. In compound fractures the usual dose used is 40,000 units every three hours for two to three weeks depending on the severity of the compound fracture. If infection does not occur, the drug may be discontinued at the end of that time.

The use of secondary closure of an infected wound and especially an infected compound fracture was begun during World War II and has proved to be of great value. In a grossly compounded wound, it is better to do a simple debridement and leave the wound open. At the end of three to seven days depending on how the wound looks, a secondary closure may be done thus saving a great deal of time in waiting for the wound to granulate in.

Another important, although not so new, advent in orthopaedic surgery is the use of the alloy vitallium for the internal fixation of fractures. This metal is absolutely non-irritating and a considerable amount of it may be used in a compound fracture with no detriment to the patient and with the great advantage of securely holding the fracture in place. When a bone graft is done on the tibia or femur, it is common practice to employ a vitallium plate in addition to the bone graft for the purpose of securing complete immobilization of the fracture site thus favoring a favorable outcome for the bone graft.

Problem Fractures

In this paper, the authors have picked out certain fractures that are notorious for being difficult to treat or for producing serious complications if not handled properly.

The first fracture which will be considered is the Malgaigne fracture of the pelvis in which there is a fracture of the posterior portion of the ilium near the sacro-iliac joint or a dislocation of this joint and this is accompanied by either fractures of the superior and inferior pubic rami in front on the same side or a separation of the symphysis pubis. These two conditions, one in front and one in back,

are accompanied with upward displacement of one-half of the pelvis.

A great deal has been written in the past about reducing these fractures and this is relatively easy to do under deep anesthesia but the fracture does not stay reduced well. If a cast is applied, the fracture usually slips out of position again. The authors treat this fracture by strong traction on the affected side using skeletal traction with a Kirschner wire through the lower end of the femur. About thirty pounds of weight are placed on the patient to start with and this is gradually reduced to twenty or even fifteen later on in the case. Traction is maintained for six or eight weeks, until union has been established. In addition to the strong skeletal traction on the affected side, six pounds of adhesive tape traction (Buck's extension) are used on the opposite side. The patient is placed in either a so-called pelvic sling or better, in a tight fitting wide sacro-iliac belt which is placed low down on the patient below the brim of the ilium and which is cinched up very tightly.

Fractures of the head of the radius sometime present a problem after treatment. In the ordinary fracture of the head of the radius, we no longer apply a cast but instead the patient is treated by simply having him put his arm in a sling for a period of four to six weeks. If the forearm becomes very stiff as regards to supination and pronation, it is well to excise the head of the radius early. If the arm does reasonably well but much later on in the case, at about two to four months, stiffness develops, it is well to excise the head of the radius also but in this instance a period of time of five or six months should be allowed to elapse before doing so. If this is not done, a bony reaction is stirred up and a great deal of new bone formation occurs in the region of the excised radial head.

Fractures of the lower end of the tibia can frequently be reduced satisfactorily but following application of a cast and taking of the x-ray, it is found that there is some bowing at the site of the fracture. This bowing can frequently be corrected by means of wedging the cast. In doing this, a circle is cut around the cast at the fracture site leaving about two inches of plaster intact on the side of the convexity of the angulation. The opposite side is wedged open quite widely and held open with a small block of wood placed in the spread portion of the cast. A check-up x-ray is taken and if satisfactory position is obtained, the cast is completed by putting additional plaster over it in the corrected position.

Fractures of the upper surface of the tibia involving the joint, that is so-called Plafond fractures or fractures of the tibial table, are quite difficult to treat conservatively. If there is any appreciable displacement, the fracture should be opened and the knee joint thoroughly explored. The meniscus on that side is usually damaged and if it is, it should be removed. There is usually a piece of bone depressed in the center of the tibial Plafond. This should be lifted up in position and held there with a piece of bone underneath it.

A piece of bone can usually be obtained from the fracture site to support the loose piece of articular cartilage and keep it in place. The main fracture of the tibial Plafond is then reduced and held in place with a long bolt placed through the tibia. A vitallium bolt should be used and if this is not available, a stainless steel one will work satisfactorily.

Fractures of the neck of the femur are still best treated with the Smith-Petersen nail. It should be inserted blindly using the Kirschner guide wire as this procedure is much less shocking than a regular open reduction of a fracture of the neck of the femur exposing the fracture site and doing the nailing under direct vision. One new feature has been added to the Smith-Petersen nail and that is, the use of the so-called anchor bar or angle bar in intertrochanteric fractures.

This method of treatment is by far the best in all cases in old people as it reduces the risk since they can be out of bed a few days post-operatively. The bar is a long piece of metal which fits on the end of the Smith-Petersen nail and is securely held there with a heavy screw. The bar runs down the shaft of the femur and it is screwed to it with long through and through screws. This securely holds the intertrochanteric fracture reduced and in place.

Due to the somewhat heated controversy which has been taking place over a period of years regarding double pin traction no discussion of the subject of modern orthopaedic surgery would be complete without bringing this matter up. It is a highly controversial subject and there is a wide diversity of opinion.

There are two chief types of apparatus, the Roger-Anderson apparatus, which has been in use for some time and which is now made with so-called half pin units and connecting bars of strong aluminum alloy so that no cast is necessary after the fracture has been properly reduced in the reducing machine. The other apparatus is the Stader apparatus, which likewise employs two half pin units but in the Stader apparatus, these are connected by means of an adjustable light connecting bar. The reduction is made with the adjustable connecting bar. A satisfactory reduction can be obtained and can be held well with these two pieces of apparatus in most cases in the hands of one who is experienced with the use of the apparatus. Both of these types of equipment allow a certain amount of spring at the fracture site but this does not seem to be detrimental in general.

Among the objections to the dual fixed traction apparatus one of the foremost is the fact that the pin holes become irritated. This is important because if a serious infection develops, then it is necessary to remove the pins and lose control of the fracture. If only a mild infection occurs, the patient can usually be left alone and will get along all right. However, if the fracture needs to be opened at a subsequent date to apply a bone graft, it is very unfortunate to have a previously infected pin hole in the operative field as bacteria can get in the wound directly from this involved area.

Another objection to the dual fixed traction is the danger of getting an over-pull. This is a definite danger because of the increased possibility of non-union.

Electrolysis of the bone from the pins being in it is a definite complication which occurs in a small percentage of cases and which may be very extensive. The Stader apparatus has less danger of this occurring because of the bakelite connecting bar between the two half pin units. Electrolysis *per se* is of no great significance as the bone will regenerate as soon as the pins are removed. However, it weakens the bone and increases the possibility of an infection.

It may be said in summary in connection with double fixed traction employing pins, that it is an excellent method of treatment in many cases but that it has numerous draw-backs as mentioned above and should be employed only with other means of treatment.

Bone Graft Surgery

One of the most common sites of non-union is the internal tibial malleolus when this is treated conservatively by simply a closed reduction and cast following a fracture of this area. When the fracture occurs, periosteum and ligamentous tissue fall in the fracture site and after reduction has been accomplished, these structures remain present between the bone ends and very frequently produce non-union. When a non-union occurs it is relatively easily traced by means of an open reduction and bone graft. The fractured surfaces are thoroughly cleaned of fibrous tissue and the surfaces curetted. An accurate anatomical reduction is obtained and a long vitallium screw placed across the fracture site to securely hold it. The incision over the external malleolus is extended upward on the tibia and using the twin motor driven rotary saw, a small bone graft a little larger than a match stick is obtained. This graft is carefully shaped to a round contour and is then driven across the fracture site through a suitable size drill hole. Union occurs in a high percentage of these bone grafts.

Non-union frequently occurs in the tibia at its lower end in the region of the junction of the middle and lower thirds. One of the common causes of non-union is inadequate fixation and after an open reduction and plating one must be sure that the plate crosses the fracture site completely and is held securely with three long screws in each end of the plate. If a non-union occurs, a bone graft should be employed and a good result can be expected in a good percentage of cases. We have been employing a plate routinely to support the bone graft in this area.

Fractures of the shaft of the femur treated in traction frequently fail to unite because it is so difficult to hold in this position and also because of the difficulty of preventing motion at the fracture site. Here again when a non-union occurs, an open reduction and bone graft should be done employing a heavy vitallium plate to hold the fracture in addition to the bone graft. In connection with bone graft surgery, numerous advances have been made. It is now possible to obtain the bridging of an open defect in one of the long bones in a fair percentage of cases, fifty to seventy-five percent, depending on the circumstances in the case. When using a free interposition bone graft, the fibula is commonly employed when bridging the radius and ulna.

In fractures of the tibia, femur, and humerus, a new type of graft a so-called half cylinder is employed in which the thickness and circumference of the bone is employed to bridge the defect. A large piece of bone of this type is secured from above the fracture site and another large piece from below. They are then placed across the fracture site, screwed together in the center, and screwed to the ends of the long bones at each end. This graft is very useful in certain types of cases with severe loss of substance. The graft is usually reinforced with pieces of ilium.

Cellophane in Orthopaedic Surgery

Several years ago it was discovered that ordinary Dupont cellophane is quite non-irritating in the tissues and may be used to form a separating membrane between surfaces which have a great tendency to stick together. Cellophane was originally used in the supra-patellar pouch above the knee joint to prevent adherence of the quadriceps mechanism to the femur. A great many cases of this type have been done and included in this group are twenty-five cases done by one of the authors of this paper. This procedure is useful when stiff joints develop following fractures of the femur with adherence of the quadriceps mechanism to the femur and result in severe stiffness. In an old synovitis of the knee with residual stiffness, this procedure is also quite useful.

In most of these conditions, there is a great deal of stiffness in the knee joint itself and the operation for relieving it is done as follows. Through long incisions on each side of the femur just above the knee joint, the quadriceps mechanism is exposed and it is incised on each side of the rectus femoris just above the knee joint. The adhesions between this muscle and the femur are freed up and the knee manipulated.

If there is a great deal of residual stiffness it is sometimes necessary to free adhesions between the rectus femoris and quadriceps muscle and the femur rather high up. Separation of the tissues and the mobilization of the knee joint a piece of cellophane is cut carefully to size to fit between the femur and the quadriceps mechanism. It is put in place and then the wounds are closed. Following this, the leg is kept in a cast for ten days at complete rest and then motion begun. In most cases an excellent range of motion is obtained and in all cases, a satisfactory amount of motion is gained.

There are numerous other uses for cellophane similar to the above. It may be used in the adherence of the triceps mechanism to the lower end of the humerus. This is a very similar procedure to that in the knee joint except the cellophane is placed between the triceps and the humerus just above the elbow.

Another place where cellophane is particularly valuable is in an old synostosis of both bones of the forearm. When such a synostosis occurs it should

be operated upon and the bone bridging of the radius to the ulna removed completely. A piece of cellophane is then placed between the two bones and it prevents bone growing across again.

Actually what the cellophane does is act as an inert foreign body and on each side of it, a very thin foreign body membrane is formed which is slick and glistening and very much like the synovial lining of a joint. During the course of time, the cellophane fragments and becomes of no use itself but it has already accomplished its purpose in forming a smooth membrane on each side of it. There is no indication for removing the cellophane as it does no damage when left in place.

Summary

Numerous recent advances in Orthopaedic Surgery are presented and discussed in some detail. The importance of penicillin and vitallium is stressed.

Certain problem fractures are presented and discussed. Certain areas of non-union are discussed in detail and the treatment of these areas by means of bone grafts is discussed.

The use of cellophane in bone and joint surgery is discussed in some detail especially as to its importance in post-traumatic stiff knees where it is placed between the quadriceps mechanism and the femur.

520 Montana Street

U. OF MISSISSIPPI MEN RECIPIENTS OF FOUR RESEARCH GRANTS

Four research grants totalling $29,590 have been awarded to three University of Mississippi faculty members in the School of Medicine. Dr. Arthur C. Guyton, Department of Experimental Medicine, chairman, received two of the grants, $16,600 from the Chemical Corps of the Department of the Army for studying dust particles in the air and $4,000 from the National Foundation for Infantile Paralysis for studying the basic physiology of pain in poliomyelitis. Dr. Sigwin B. Raska, assistant professor of pharmacology, was given $3,990 by the American Life Insurance Medical Research Fund in New York City for research on "Metabolism of the Kidney in Renal Hypertension."

The fourth research grant of $5,000 was awarded to Dr. J. D. Reese, professor of pathology and bacteriology, from the Cancer Control Branch of the National Advisory Cancer Council. The money is for a cancer teaching service aimed to promote coordination and improvement of instruction in the field of neoplastic disease.

In his work for the Army, Dr. Guyton will develop an electronic device to count microscopic particles suspended in the air. He pointed out that millions of unseen particles are suspended in an ordinary room and that silicosis often results from workers' inhaling dust in such places as granite mines and casting industries.

This project will be a continuation of war-time work Dr. Guyton did for the Navy at Camp Dietrick, Md. Dr. Abbey B. Cullen, Jr., associate professor of physics, will act as consultant in developing the electronic counter.

Regarding his research on pain in polio, Dr. Guyton explained from personal experience, "Patients have terrific pain for the first three or four months of the disease, pain which is worse than the paralysis itself." This suffering is caused by poor blood supply to the muscles, he continued, but it may be relieved by certain drugs such as *curare*.

Dr. Raska's research in hypertension, or high blood pressure, represents furtherance of work he did at the University of Toronto and at Cornell University. In discussing his insurance fund grant, he explained the two types of hypertension, one caused by kidney trouble and the other, sometimes labeled "neuro-hypertension," resulting from a disturbance in the central nervous system. Unknown to patients, Dr. Raska continued, diseased kidneys sometimes cause high blood pressure which in turn aggravates the kidney trouble, resulting in still higher blood pressure. Eventually, this will kill the patient.

In his research, the doctor will try to find out how neuro-hypertension affects the kidneys. Medical men know that when so affected, the kidneys set up the usual fatal cycle of raising the blood pressure.

Dr. Raska said that insurance companies are especially interested in the cardio-vascular diseases, a major cause of death. In the form of cerebral hemmorrhage, they resulted in the sudden death of both Franklin D. Roosevelt and Wendell Willkie.

Dr. Reese's grant in the field of cancer will be used to collect materials and visual aids for teaching medical students about cancer. As chairman of the Department of Pathology, he will integrate cancer teaching with the Departments of Biochemistry and Pharmacology. From time to time, outside lecturers will be brought in under this grant to provide additional instruction on cancer.

PIONEERS IN THE CARE OF THE BLIND IN AMERICA

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JOHN DIX FISHER
(March 27, 1797—March 3, 1850)

John Dix Fisher, the son of Aaron and Lucy Stedman Fisher, was born at Needham, Mass. He graduated from Brown University in 1820 and from Harvard Medical School in 1825. For two years, Dr. Fisher studied in Europe. At Paris, he gave special attention to the study of auscultation under Lanenec. He was one of the very first in America to utilize the art in diagnosis.

In 1829, Fisher published "Description of the Distinct, Confluent and Inoculated Smallpox." He was among the first to use ether in childbirth. Dr. Fisher was a member of the Massachusetts Medical Society, and was named acting physician of the Massachusetts General Hospital a short time before he died.

While at Paris, Dr. Fisher studied the modes of alleviation of the condition of blind children. He analyzed the National Institution for the Youthful Blind at Paris (parent of all such schools), and presented this survey to influential friends in Boston.

Fisher aroused the enthusiasm of his auditors sufficiently for them to call upon the legislature for incorporation of the New England Asylum in 1829. Fisher was vice president and physician until his death. For one year during the absence abroad of the director, he administered the institution—then the Perkins Institution and Massachusetts Asylum. Dr. Fisher never accepted any fee for his services.

Fisher persuaded his friend, Samuel Gridley Howe, to direct the New England Asylum. But it is to Fisher that the honor of introducing into America the movement for education of the blind is accorded. The name of Fisher has been given to one of the cottages at the Institution and is inscribed on a mural tablet there. A monument in Mount Auburn Cemetery, Cambridge, bears this inscription:

"Erected to the memory of John Dix Fisher, M. D. by those who loved his virtues—The Physician and friend of the poor—The early and efficient advocate for the education of the blind—The liberal deviseth liberal things, and by liberal things shall stand."

SAMUEL GRIDLEY HOWE
(November 10, 1801—January 9, 1876)

Samuel Gridley Howe was born in Boston. His father was George Neals Howe, a middle class business man, ship owner and manufacturer. He was a descendent of Abraham How or Howe, a settler of Roxbury, Mass., about 1637. Patty Gridley, his good looking mother, was a descendent of a martial family. Colonel Gridley was the constructor of the fortifications before the battle of Bunker Hill. Some trace Samuel Gridley Howe's military bearing and search for adventure to this side of his family.

Samuel Howe was selected to go to college because of his manner in reading the family Bible. Brown University rather than Harvard was the choice because it was less under Federalist influence. Howe graduated from Brown in 1821—and from Harvard Medical School in 1824.

Dr. Howe was drawn to the conflict of the Greeks against the Turks and spent six years fighting as a guerrilla, acting as surgeon to the Greek fleet, and administrating relief. He had made one trip to the United States for funds and clothing and other relief supplies. He delivered these by boat and dispensed them according to a plan he devised—freely to the disabled and infirm; but those physically fit had to work for their share. Thus he built roads and docks. Howe wrote a "Historical Sketch of the Greek Revolution" in 1828.

Dr. Howe was known as the "Lafayette of the Greek Revolution". The poem by Whittier, 'The Hero' is written of him and his exploits.

Howe left Greece in 1830 because of severe malarial fever. He stayed in Paris to study medicine, 1830-1831.

Howe returned from Europe in 1831. He was engaged to open and direct the New England Asylum for the Blind, (incorporated in 1829 through the good offices of his friend—John Dix Fisher). He made studies of the schools for the blind. He also carried American relief to the Polish refugees in Prussia at the request of Lafayette. Dr. Howe was apprehended for his activities and cast into prison without due process of laws.

Howe spent six weeks in jail under the most terrible conditions. He was released through the American Minister to Paris. This period of incarceration influenced his actions in later life.

Howe returned to Boston in August 1832. He opened the new school in his father's house with six pupils. It is claimed Howe went about blindfolded to appreciate the difficulties of his pupils. After a demonstration of the accomplishments of his blind pupils, Howe convinced Colonel T. H. Perkins (1764-1854) of Boston of the excellence of his plans. Perkins donated in perpetuity the family mansion in 1833.

Thus the name of Perkins was perpetuated in the Perkins Institution and Massachusetts Asylum for the Blind. After a short sojourn at the Perkins mansion, the house was found unsuited for the purpose. Permission having been obtained from the Colonel, the mansion was sold

and the project moved to South Boston in 1839. State aid was increased from $6,000 to $30,000 annually.

Howe directed the school—name changed from Asylum to School in 1877—for 44 years!

Howe visited 17 states in behalf of education for the blind. His teachers were in great demand and they spread Howe's gospel to other institutions. His efforts led to the inauguration of schools for the blind in the United States: New York, 1831; Philadelphia, 1833; Columbus, Ohio, 1837; and Staunton, Va., 1839. In the hundred years since, each state in the Union has facilities for the education of the blind.

Dr. Howe had learned from James Gall of Scotland how to use his invention of raised letters. In Boston, Howe provided a print shop and from 1834 to 1836 books were printed for the use of the blind. He ultimately improved on Gall's invention and diminished the bulk of the books by fifty percent, and the cost by 75 percent.

The most famous scholar of the Perkins Institution was Laura Dewey Bridgman (1829-1891).

Laura Bridgman was born in Hanover, New Hampshire, December 21, 1829. She was a bright and intelligent infant until at two years of age she had a malignant fever—scarlet fever. She lost her sight and hearing and her speech. Her life was despaired of, but she recovered from the first shock to her health, and learned to go about a little and to knit and sew a little. When eight years old, she came under the care of Dr. Howe. She was blind, deaf and dumb.

Dr. Howe taught her by embossed letters and the feel of objects. She learned to read and to spell words by touch through a special board and raised letters. She then learned to write with a lead pencil and she studied geography through special globes. In time, Laura Bridgman taught others. She lived at the Perkins Institution, a reborn and helpful woman, although blind, deaf and dumb, until January 24, 1891. Howe's greatest triumph and claim to fame came through Laura Bridgman. The reports of her progress were published in many languages.

In the same cottage with Laura Dewey Bridgman was Anne Mansfield Sullivan. She had been almost totally blind since birth, and had been at the Perkins Institution since she was fourteen. At twenty years of age, with partially restored sight, Anne Sullivan journeyed to Tuscumbia, Ala. She was to supervise the training of a six year old blind deaf-mute. The child was Helen Keller!

And more things are to be told.

Dr. Howe married Julia Ward in 1843, when she was 24 years of age.

Dr. Howe was a supporter of Horace Mann in his reform movement—better public schools and normal schools. This was in 1844.

Dr. Howe successfully supported the mode of articulation and the oral method versus the sign language for the deaf in 1847.

In 1848, Dr. Howe was fighting for the proper care and training of the feeble minded.

Dr. Howe always sought prison reform and aid to discharged convicts, because of his own incarceration in Berlin. He was a loyal friend of Dorothea Lynde Dix.

Howe was interested in the anti-slavery movement and the care of fugitive slaves. He was co-editor with Julia Ward Howe of the Commonwealth—an anti-slavery paper he founded in 1851.

Doctor and Mrs. Howe were in no small part responsible for the swaying of public opinion in Boston, at least, leading to the Civil War.

Howe was implicated in pre-civil war activities and was in Canada for a short period. He was ultimately cleared after a visit to Washington.

Dr. Howe was a member of the recently created Massachusetts State Board of Charities —the first in America, 1863. He became its chairman in 1865 and retained this position until 1874. The methods inaugurated for the disposition of relief by Dr. Howe have become accepted in all parts of the United States.

In 1866 and 1867, Howe raised funds for the Cretans, and went to Europe with his wife and children to distribute the relief funds to the Greeks. Dr. Howe managed to enter Crete—a hazardous and indeed difficult task.

Howe went to Santo Domingo in 1871 as member of a commission to study the feasibility of annexing the Island to the United States.

Dr. Howe had been the recipient of medals and honors throughout his lifetime.

JULIA WARD HOWE

Julia Ward was born in New York City, May 27, 1819. Her mother was Julia Cutter Ward. Mrs. Ward died at the age of 28 years. Her husband, Samuel Ward of a Rhode Island family and in banking circles, survived her and undertook the care of their child.

Julia Ward was taught among others by Joseph Greene Cogswell, one time Librarian of the Astor Library, New York. The young lady studied and became proficient in ancient and modern languages. She contributed anonymously when 17 years old.

Julia Ward Howe travelled to Europe with her husband and on her return made her home in Boston. She wrote a number of books on travel and published several collections of her poems. She is best known through 'The Battle Hymn of the Republic' written in Washington, D. C., in 1861 and first published in the *Atlantic Monthly*, February, 1862.

As early as 1869, Mrs. Howe was an exponent of the woman's suffrage movement. She was a club woman of note and authority. She spoke from the pulpit and from the lecture platform at home and abroad. Mrs. Howe before her death in 1910 continued her work. She wrote a number of books including one about her husband.

MICHAEL ANAGOS

Michael Anagos was born in Epirius, Greece, November 7, 1837. His father was a farmer. At 18 years of age, Michael was ready for the University of Athens, where he spent four years at law school after graduation. He became a proof reader to support himself during these years and after completing his law studies he became a newspaper man rather than a lawyer. He was a political firebrand.

Michael Anagos met Dr. Samuel Howe on the latter's visit to Crete. He became an assistant in this work and returned with Howe to the United States. He was associated with the work at the Perkins Institute. In 1870, he married Julia Romana Howe, daughter of the director. Julia Romana was born in Italy, March 12, 1844. She had been associated with her father in the conduct of the school for the blind. She was a writer and poetess. Julia Anagos died March 10, 1886.

Michael Anagos succeeded his father-in-law as director of the school and made many advances in the education of the youthful handicapped. He improved the Perkins Institute, raised its endowment and the value of the plant. He also instituted kindergarten care and day care of the blind. He remained director until his death in 1906.

Henry Marion Howe became a metallurgist; wrote books on this subject and was professor at Columbia University. He died in 1923.

The daughters were writers and had books of biography. Laura Howe Richards gained a reputation as a writer of juveniles. With her sister Maude Howe Elliot, she wrote 'The Life of Julia Ward Howe', in 1916, which won a Pulitzer Prize. Laura also wrote a biography of her father. And to close our circle, we mention her biography of Laura Bridgman. Remember her? She was the prize pupil at the Perkins Institution founded by John Dix Fisher, friend of Samuel Girdley Howe.

Only through the work and imagination of the above persons could our present institutions for the blind have achieved their high standard.
18 East 89th Street

SKETCH OF A GREAT SCOTS PHYSICIAN

William Mackenzie (1791-1868), a famous old-time Scots physician, was born in Glasgow and educated during his youth first as a theological student; then decided on medicine and in 1815 took the diploma of the Glasgow Faculty of Physicians and Surgeons. He was in London for a short time where he attended Abernethy's lectures at St. Bartholomew's Hospital. Later he visited Paris, Pavia and Vienna where he studied under von Beer who advised him to take up surgery of the eye.

He returned to Britain in 1815 when he became M. R. C. S. but failing to make headway in practice in London, he went back to Glasgow in 1819. He obtained a Fellowship of the Faculty of Physicians and Surgeons Glasgow, and was appointed professor of anatomy and surgery at the Andersonian College.

In conjunction with Dr. Monteau he founded the Glasgow Eye Infirmary in 1824. This was the first eye infirmary in Scotland and under William Mackenzie and successors has been responsible for several important developments in ophthalmology.

In or about 1824, Mackenzie was appointed Waltonian lecturer at Glasgow University. He lectured on the structure, functions and diseases of the eye. In 1833 he became M. D. Glasgow. He made many contributions to the clinical side of ophthalmology, and was first or among the first to give a clear pen and ink picture of glaucoma and sympathetic ophthalmia. In 1843 he was given the Honoris Causa—newly instituted fellowship of Royal College of Surgeons, England.

Mackenzie died in 1868. He was an authority on the eye, its functions and diseases and his book on diseases of the eye was, up to the coming of the ophthalmoscope, a standard work. In addition to possessing special knowledge of his subject and being a deft operator, he was a writer of distinction. According to Dr. Cowrie's *History of Scottish Medicine,* Mackenzie founded the Glasgow Medical Journal and edited it for a time.

Mackenzie's large medical library was incorporated with that of the Faculty of Physicians and Surgeons of Glasgow and his collection of preparations of the eye is in the library of the Medical school of St. Mungo's College, Glasgow. William Mackenzie was of the best type of Scottish physicians and it should be borne in mind that Scotch physicians and surgeons have had much to do with furthering medicine and surgery in England and Canada and for this reason, William Mackenzie is deserving of remembrance.

Editorials

Trends in Medical Education For The Future

It is a truism that medical students of today have at their disposal greater opportunities for "easier learning" in medicine than their fathers ever dreamed of . . . This has been brought about largely through moving pictures, sound effects such as amplification of valvular heart sounds which are audible to a roomful of students at one time, recording of actual history-taking, and three-dimensional anatomical studies through the use of plastic materials. Thus the laborious task of "digging things out of books" has been reduced to a reasonable minimum.

An appraisal of current trends as they affect the Columbia-Presbyterian Medical Center in New York has been made as of March 8, 1948 by the Committee on Administration of the Faculty of Medicine under three headings: Educational, Research, and Patient Care.

The health requirements of the next generation and those which follow may be quite different from what we have known in the past. Just now there is a serious shortage of well-qualified teachers who, in the last analysis must be not only clinicians but researchers. This Medical Center holds in high place its obligation to offer extensive facilities to young men and women of intellectual promise who wish to work in fields adjacent to scientific medicine as well as in the strictly medical field itself.

Emphasis is placed on the need for young men and women, who shall begin by working under a group of middle aged masters who have acquired and are still acquiring knowledge which shall ripen into wisdom. About 50 men in the younger age group (at the instructor and junior professor level) are needed, but they must have sufficient laboratories and experimental material to carry on their work. Moreover, there must be compensation to enable them to live adequately but not sumptuously. There are already a few "Fellowships" available on such a basis, but not enough. It is admitted somewhat jokingly, that "a million dollars would help a lot."

It is expected that Government sources will supply some of the funds, and that grants-in-aid from Foundations will supplement these, but it will always be "not enough", no matter how much is available. Fields for experimentation and problem study are limitless. An immediate need is a hospital for laying up patients with diseases of the skin, a specialty which is now chiefly on the ambulatory basis. Another very much desired facility is a large well-designed, modern autopsy room such as the European clinics have had for generations past.

In clinical research, growing emphasis must be placed upon the importance of studying chronic diseases and those incident to old age. These have been rather grossly neglected, save for an effort to make such patients "comfortable." Chronics have not engaged the attention of young internes, since these diseases have long been relegated to the "incurable", and are therefore uninteresting.

A teaching institution must have a lot more than wards, beds and clinics, although these are indispensable. The basic medical sciences must receive their full need of attention.

It is heartening to learn that "the total funds for medical research in the United States will increase threefold in the next ten years." Reports from the Rockefeller Foundation and other like philanthropic institutions do not paint such a rosy picture. As for Government funds, these are too often limited to "specific projects", and while restricted funds are acceptable and necessary, unrestricted funds make for elasticity in planning for the future.

The essential course of action is based on Departmental and Inter-departmental activities. This mammoth Medical Center which was built with an eye to enormous expansion some 20 years ago has already found many limitations when trying to expand present available space. Additions to existing laboratories, for example are not always possible because of architectural design, which originally was supposed to be "the last word".

Interdepartmental endeavor must be based upon well-laid plans for present needs and for future expansion. Various "Institutes" are proposed, each one to deal with a research field of study, staffed in part at least by an "overlapping" from personnel in other departments. It is thought that reorientation of approach to scientific inquiries might stimulate interest in, and financial support of such undertakings.

Sixteen such institutes have been listed thus far, beginning with Human Reproduction, Growth, Nutrition, Aging, Cancer Research, Cardiovascular Disorders, Chemotherapy, Infectious Diseases, Immunochemistry, Enzymology, Tropical Medicine, and Industrial Medicine. Also institutes of Rehabilitation, Speech and Hearing Disorders, Social Pathology, and Rural Medicine. As an instance of overlapping, Psychiatry is included under six of the institutes! The range is as wide as human life and endeavor can make it, and, while one must set up

such "plans", is there not some danger of topheaviness wherein one might see the entire scheme fall?

It is good to find biochemistry and biophysics prominently "on the list." Concerning the latter, the notation is made that because of the growing importance and wide ramifications of biophysics into practically every field of medical science, it is imperative that a laboratory for the prosecution of research in this field be set up at the earliest possible moment; for it is now at very nearly the same stage as was biochemistry when it found its place as a major subject. Nuclear energy must be closely allied to biophysics, and as everyone knows, that is an extremely prominent item in our present-day "agenda".

The matter of "patient care" follows the natural order of sequence; for what can all of our advance in knowledge amount to unless it results, ultimately, in relieving human unhappiness caused by disease?

How to Avoid Malpractice Suits

The *New York Physician,* official organ of the N. Y. County Medical Society, gives some excellent advice in its issue of April 5, 1948 on the causes and prevention of malpractice suits.

Everyone knows that there has been a growing tendency to sue anybody and everybody for every "wrong", fancied or real, which has been alleged during the past few years.

Insurance companies have suffered so much from this unwholesome and nefarious practice, that they have been obliged to raise rates against their better judgment. This means that honest persons who carry insurance for a possible future emergency, and not as a means of "making a living", are paying for the dishonesty of a relatively few who manage to buy insurance in companies which are above reproach, but which, to save the costs of an expensive court proceeding, often "settle" and allow right to be trampled in the dust. Malingerers and insurance-milking humans we have always had with us, and doctors sometimes fall victim to them quite unwittingly.

However, the profession has an obligation to society and to the insurance companies to avoid suits at law by every possible means. An insurance policy issued for a group at special rates, or to an individual not a member of a group constitutes no license for carelessness or wilful disregard of human rights in general. The order to a disgruntled patient to "Go ahead and sue" just because one feels the security of group insurance is bad advice from any angle.

Sometimes such suits are the results of a too "cocky" attitude on the part of a doctor, where soft speech and an effort to keep things "sweet" might save time, money and effort for all concerned.

One should keep in mind the Golden Rule, and also make allowance for human peculiarities, stubbornness, vindictiveness, revenge, jealousies, and all the other baser passions which make for unhappiness. That "ounce of prevention" is well stressed in the editorial just mentioned. Prevention holds a value miles higher than all efforts at "cure".

A complaining patient may make an unjustifiable remark concerning a colleague, or make an inquiry into a what-do-you-think of Doctor So-and-So? A mere shrug of one's shoulders or a shake of the head may start a suit against a confrére which will involve the person questioned quite unpleasantly. If it is a question about the technique of an operation being the cause of an unhappy result one should say, "I cannot tell, I was not present and do not know what happened in the operating room." Then one may add, "I do not know your doctor, but I am sure of this, his one great desire was and is to see you recover with a one hundred percent result."

Is it not true that most of the "fun" we practitioners get out of our daily round is the joy of seeing a patient get well? If we had an unending round of bad or poor results, a "To-Let" sign would have been on our door long ago!

It is very important to guard the tongue; for patients hang upon every syllable their doctor utters, and in repeating it, they so often garble the sentences as to make them unrecognizable. Therefore, when some one comes in with a "my doctor said", we must be content with a "Is that so?" Or, "I'm sure he knows what he is talking about." Or "He has an enviable reputation among all his confréres." The kind word, even if unjustified, always carries a message of good will.

A good rule for the physician-patient set-up is to avoid the word *cure* and to make no promises of any kind. It is sufficient to say, "I shall do my very best to help you, and I feel sure you will be satisfied with the result." In any case, a full and complete history of every patient is a *sine qua non.* We have beheld court room scenes where a good and conscientious physician has been raked in the fire by an irate judge because of a sketchy incomplete and uninforming case history.

If the patient is a minor, consent of parents or guardians must be had, preferably in writing. Failure to do this may make collection of a fee impossible, or favor an actual charge of technical "assault". This is especially true where a divorce is

underway or is contemplated, for both parties deny responsibility, and usually claim that the other partner "had no business to bring Johnny to you." We must ask who is going to pay the bill before undertaking treatment or operation, and it is well to have a signed statement to this effect.

Public knowledge of things medical is now so complete that if one fails to obtain laboratory assistance in diagnosis, incompetence can be declared and maintained. A similar detail has to do with calling a consultant. If a diagnosis is "wrong", or the medical adviser can be found to have erred in the management of a case, the responsibility rests alone on him. It should be shared with a consultant.

If injury to a patient, no matter how trivial, takes place as a result of faulty equipment, responsibility rests upon the doctor directly, no matter if he has ordered an assistant to make repairs but has not checked back to determine whether the order has been carried out. An employing physician or surgeon is wholly responsible for the acts of his assistants in whatever capacity employed,—as doctor, nurse, orderly, chauffeur or any other designation.

If there is any doubt about the status of a patient, his previous condition should be talked over with the former medical adviser. This is not only a welcome courtesy, but may be protective in the long run.

Telephoning prescriptions, and then failing to check back upon personal interview with the pharmacist, may cause severe illness or even death, and result in a joint suit for carelessness.

A favorite ruse of "dead beats" is to complain about the service when a bill comes through for "treatment rendered." Some patients threaten counter suit for malpractice, if one tries to collect the bill, legally, in which case he is sitting in a strong seat. Such a situation should be referred at once to legal authority, and no direct communication should be had with the disgruntled patient who may be exercising technical blackmail.

Finally, all jurors are, or have been patients under care of some physician against whom they may have a grudge which they will exercise against anyone holding the title of M. D. Sympathy, bias, prejudice, ill will, passion, warped judgment,—all of these may work against a doctor-litigant. Here one is at tremendous disadvantage, since nothing can be done about it.

Medicine and The Rockefeller Foundation

The annual report of the work of the Rockefeller Foundation covering the year 1947 has just come to this desk. It is the swan song of Mr. Raymond D. Fosdick, president since 1936, and now retiring because of age 65! Incidentally, Mr. Fosdick, a brother of Rev. Dr. Harry Emerson Fosdick, renowned clergyman, received the degree of Doctor of Laws at the 201st commencement of Princeton University on June 15. Mr. Fosdick was graduated there in 1905, and the bestowal of the degree is *honoris causa* because of the "supreme ability and discrimination" in the management of a great philanthropy these many years.

During the past year, The Rockefeller Foundation gave away some $23,413,615, an amount exceeding by four millions, the figure of 1946! Public Health agencies received $2,500,000, Medical Sciences, $1,500,000, and the China Medical Board, $10,000,000. Other social agencies were benefited by from one and one-half to three millions, and among them were Natural Sciences, Social Sciences, the Humanities and the General Education Board. The purpose is to extend the greatest good to the greatest number of persons. The Foundation is besieged by all sorts of people who say they "need money" for all sorts of schemes. It does not make gifts or loans to individuals, finance patents, or contribute to the making of private profits, building or maintenance of churches, hospitals, local organizations, or support campaigns to influence public opinion. Hence, 2,510 denials went to applicants who were not "on the list" of possible benefactions. The lines have to be firmly drawn.

As the report so well states, "the past is littered with the wreckage of nations and empires which tried to meet the crises of their times by physical means alone . . . Unless we can rise to greatness and lift our answers to an intellectual and ethical plane . . . our fate . . . will be the fate of all species, whether birds or brontosaurs." Physical force and defensive armor alone will not save us if we cannot build up spiritual values in men and nations.

It is strange that, although all history has tried to teach this lesson to mankind again and again, we still grovel along earthward with little or no thought of the eternal verities. The gap between social studies and the humanities which deal with man's relation to man, and physical studies (chemistry, engineering, etc.) seems to be ever-widening. The emphasis is on security through science and invention, and yet great poetry, painting, philosophy,

architecture (cathedrals) and the like have been born chiefly in times of stress!

During 1947, representatives of the Rockefeller Foundation have visited almost every country in the world, save Bulgaria and the Soviet Union. Visas to these could not be obtained, and it was impossible to make satisfactory contact with their scholars and humanitarians. Isolation of the scholars of Eastern Europe is growing. The USSR has, for example, distinguished mathematicians and biophysicists, but they are obliged to work largely alone, and do not enjoy the "contacts" of other scientists, save through a few publications.

There is, however, no bourgeois medicine, no capitalistic medicine, save as it exists in disordered imaginations. Thought cannot be walled in, or, if it can it will become blighted and withered. Dr. Fosdick's report says that, "Our challenge in this generation is to discover the common interests, the terrain of possible collaboration . . . that bind the human race together regardless of ideologies or boundary lines."

The World Health Organization of the United Nations is to be praised for its efforts to unify the common fight against disease, suffering and premature death; for the world is indeed *One* in terms of human distress.

The Rockefellers have always been interested in the welfare of China. The China Medical Board was set up in 1914. Then followed the organization of the Peiping Union Medical College, "one of the leading centers of medical training in the world . . . the symbol and synonym for high quality in professional education in China." An appropriation of $10,000,000 was made to the China Medical Board, Inc. during 1947 to rehabilitate the University after Japanese occupation. The buildings were not unduly damaged when recovered from the Japanese in 1945, but equipment had been carried away, and there was considerable deterioration due to time.

In 1946, the Foundation sent a committee of three Americans to study the situation. They were, Dr. Alan Gregg of the Foundation staff, Dr. Harold Loucks of the C. M. B., Inc., and Dr. C. Sidney Burwell, dean of the Harvard Medical School. They recommended an increased endowment, and this was done, bringing the total amount to $22,000,000! In all some $44,947,325 have been contributed to this enterprise in China, the largest which the Foundation has ever made to any single project.

The value of this generosity is seen in the "neutrality" of medicine in the Asiatic wars; for both sides are being served, and have been since the beginning of hostilities, by Peiping-trained personnel. It is hoped that medicine may thus become a bridge of friendship over the gulf of fear, hatred, and national misunderstanding.

A word should be said about the aid which has been given to nursing education,—some $7,000,000 in all. It has been related to the Public Health Program quite intimately in order to encourage community nursing in particular. The public health nurse is distinctly an American individualist, exceeding in number all other health workers.

The Yale School of Nursing, established by the Foundation, with Miss Annie W. Goodrich as its first dean was an outgrowth of the Goldmark Report published in the early nineteen twenties by The Rockefeller Foundation. Its graduates have reached the four corners of the earth, and their influence is felt in Cracow, Zagreb, Prague, Brussels, Athens, Bucharest, and Helsinki.

Rio Janeiro has its Anna Nery School of Nursing and trains young Brazilian women in the technique of public health work. There is also a School of Nursing in the University of Toronto which has a basic professional program to prepare students for community nursing service, and according to the report "Toronto is one of the peaks of nursing training in the world."

During the past 20 years the Foundation has been much interested in what it calls "The Cross-Breeding of Biology," particularly with respect to adapting the techniques of the physical sciences to the problems of living matter. Experimental biology is a young subject, and it has a long road ahead on which it may prove to be the source and foundation of a more intimate knowledge of the cell in health and disease. A sort of molecular level has been reached, aided by the electron microscope from which medical science may learn much about cancer and other baffling diseases.

Two outstanding institutions in the U. S. are recipients of "grants" to further this kind of research; namely, the California Institute of Technology, and its counterpart in Massachusetts. Grants have also been made to the universities in Leeds and London to further studies in cellular biology.

There is much more in this excellent, "Review for 1947" concerning economic research, approaches to peace, and the humanities in relation to time and space. It is in reality a birdseye view of the sciences in relation to present-day living, and is of vital importance in helping to understand man's relation to his environment.

LETTER FROM BRITAIN

(From Our Own Correspondent)

Opinions differ widely as to the health of the British population during the past seven years, and especially at the present time. As a matter of fact, there is a more rigid control over the people's health now than ever before and it naturally exercises the minds of medical men.

Some hold, and express themselves vigorously, that the present diet is against the good health and well being of the community at large. Recently at a meeting of the Hunterian Society, a motion was carried that "Our Present Diet was Undermining the Health of the Nation" and the speakers generally assailed existing methods as detrimental to the general health. On the other hand, many members of the British medical profession take a quite opposite view of the situation and Stephen K. Westman, controverting the above attitude in a letter published in *British Medical Journal,* December 6 last begins by saying that in his opinion the reasons given by the speakers were not based on scientific and practical experience and quotes some of his own observations as an obstetrician in support of his opinions.

He says that during his early manhood he had to feed on a diet far inferior to that of the poorest Englishman of today, which did not seem to lessen to any extent either his physical or mental powers as he was an oarsman of distinction and his sons were passed A-1 for R. A. F.

Perhaps the truth of the existing state of affairs here as regards the national health lies in the happy medium. Many are well nourished now, comparatively speaking anyhow, who in past years had not enough good food. But there are others, especially those having a stated limited income, who, owing to the great increase of prices, do not have enough food of good quality. Again some who lived luxuriously have, or should have benefited in health by restrictions in diet.

On the whole, the health of the majority has not suffered, although it is foolish to express oneself dogmatically on the point. The cost of food is high—absurdly high in many instances. One feature to be commended is that the Government and local authorities have taken great care of the children, the future generation, who as far as health and physique are concerned appear to be in good condition. No doubt but that the country is overpopulated and people have too great a tendency to live in cities and towns while country districts are sparsely inhabited.

Scientific Adviser to Ministry of Food

The British Minister of Food has appointed Dr. Norman C. Wright to be his chief scientific adviser in succession to Sir Jack Drummond, F. R. S.

Belfast University

The Senate of Belfast University has appointed Mr. A. C. Stevenson to the newly created Chair of Social and Preventive Medicine. Dr. F. E. Morrison has been appointed to the lectureship in pathology.

Walter and Eliza Institute

Dr. F. M. Burnet, Director of Walter and Eliza Institute for Medical Research, Melbourne, Australia, has been awarded the Medal of the Royal Society for his distinguished work on bacteriophages, viruses and on immunity and for his contributions to the study of infectious diseases as an ecological phenomenon.

Care of the Aged

Mr. Aneurin Bevan, British Minister of Health, speaking recently in Parliament on the proper care of the aged, said in part that this was the peculiar problem of modern society. As persons grew older they became jealous of their independence and the Government had therefore decided that the workhouse must go.

Indeed, the welfare authorities would be given power to establish special homes where old people would enjoy the maximum of privacy and independence. "Bigness", Mr. Bevin said, "was the enemy of humanity and the optimum limit for these homes must be for 25 to 30 residents who should belong to mixed income groups. The character of the houses would be destroyed if merely the most indigent lived in them". He added that it would take some time to build such houses.

Sir John Fraser, K.C.V.O., M.D., F.R.C.S. Edin.

Sir John Fraser, one of the great men of his generation, died recently. He was principal of Edinburgh University and previously had been regius professor of clinical surgery, Edinburgh. Born in 1885 at Tain, Rossshire, he had a distinguished career as a student and as a man.

He was an adept and able lecturer and a writer of great excellence. His book, "The Surgery of Children" was the first of its kind. He was famous at home and abroad and was honored in Britain, Europe, America and Antipodes. His devotion to work was remarkable, though of late years he was handicapped greatly by ill health. In addition to his deep and clear knowledge of surgery and his ability as a speaker, he had a flair for business and organization of which was made much use to the benefit of Edinburgh and its University.

News Items

University of Sheffield: Professor H. N. Green, professor of pathology at the University of Sheffield, has been granted the additional title of director of cancer research and Dr. H. McIlwain lecturer in biochemistry.

London Hospital: Dr. A. G. Leatham has been appointed Sherbroke research fellow to the cardiac department of the London hospital, Whitechapel.

Bearstead Memorial Hospital: A new unit of the London hospital, Whitechapel at Lordship Road, Stoke Newington, was opened recently for the reception of patients irrespective of religion or creed.

Sick-Bay for Civil Servants

During the last week of November 1947, a sick-bay was opened at Moray Lodge, Campden Hill,

London, for civil servants of the lower paid groups appointed to posts in the London area and living in hostels or lodgings. The sick-bay is to be administered by the Ministry of Health and the British Red Cross will manage it from day to day. Medical adviser of the British treasury and his staff will act as medical officers, but private doctors will be free to visit their patients in sick-bay. Only home nursing type of patients will be admitted.

Scientific Treatment of Delinquents

The Institute for the Scientific Treatment of Delinquents has issued its first report since 1940. During the war the Institute worked underground but it is stated that progress was made with its educational work in addition to University Extension lectures. Courses for the diploma in social studies have been extended for those engaged as probation officers or for other social duties.

Fitz Patrick Lectures: Sir Arthur MacNalty, F. R. C. P., delivered the first of the Fitz Patrick Lectures before the College of Physicians of Pall Mall East, S. W. on December 9. In this lecture he discussed the medical department of the Local Government Board and in his second and last on December 11 the foundation of the National Health Service. The two lectures will discuss "The History of State Medicine in England".

North Persian Forces Memorial Award: The award of the North Persian Forces Silver Medal for 1946 has been made to Dr. John Norrie McArthur, F. R. C. P., for the best paper on tropical diseases in the year. The medal is awarded every year for the best paper on tropical medicine published in any journal during the 12 months ending Dec. 31, by any officer of under 12 years of service in the Royal Navy, the Royal Army Medical Corps, the Royal Air Force or the Colonial Medical Service. Dr. McArthur was awarded the medal for his paper on "Malaria Transmission in Borneo", published in the *Lancet*.

Social Report Published

Report of the London Council of Social Services for the year 1946-47 was published a short time ago. Of special interest was the expansion of the Old People's Welfare Department that it revealed. An experimental London Federation of Homes for the aged has been set up with the object of raising the standard of homes for the aged and for providing a consultation service. The Federation is planning a conference for matrons of old people's homes. The London Council has surveyed the home help available for old people in various boroughs. Ten local committees in the London area are now providing mobile meals and canteens.

The care of the old in Britain, and their proper care and comfort is a serious problem. Many of these are poor and infirm as well as old. It is a matter which calls for the consideration of the Government. Some steps have been taken and more are in prospect.

News Items

Analgesics Conference Held in New York.—Scientists and narcotic law enforcement officials discussed the newer synthetic analgesics, Demorol, Methadon, and a compound as yet unnamed at a recent conference organized by Dr. Maurice L. Tainter, director of the Sterling-Winthrop Research Institute, N. Y., under auspices of the New York Academy of Scientists.

OT Convention Scheduled For New York, September.—More than 500 leaders in the field of occupational therapy, representing every section of the United States, will participate in the 31st Annual Convention of the American Occupational Therapy Association at the Hotel Pennsylvania, in New York City, September 7 to 11, 1948 . The Association has approximately 3000 members professionally engaged in rehabilitation activities.

Among the outstanding speakers who are scheduled to present papers are: Dr. Howard Rusk, chairman of the Department of Rehabilitation and Physical Medicine, Bellevue-New York University College of Medicine; Mr. Holland Hudson, director of the Rehabilitation Service, National Tuberculosis Association; Dr. Luther Woodward, field consultant to the National Committee for Mental Hygiene; Dr. Leland E. Hinsie, assistant director, New York State Psychiatric Institute.

On September 10 and 11, a teaching Institute will present recent developments and techniques in the treatment of neuropsychiatric conditions. Various trips to hospitals and other institutions in New York City and surrounding areas, on September 9 and 10, have also been arranged for those attending the Convention.

A copy of the preliminary program may be secured from the American Occupational Therapy Association, 33 West 42nd Street, New York 18.

First Human Reproduction Program Now In Progress.—The Board of Directors of the National Committee on Maternal Health, New York, has approved five applications for research in the field of human reproduction, made by scientists to the National Research Council. The total grant for the projects for the first year is $21,918. Since basic research generally requires less money than the application of the

discoveries, the importance of these projects is far greater than the grants involved would indicate.

Most of the projects are concerned with studies seeking to throw light on factors governing fertility control and problems of infertility—often the same project affects both, since the same piece of information may well enable us to improve methods of conception control and aid for the childless.

VA Library Expands.—More than 158,000 professional books and journals are on the shelves of medical libraries in Veterans Administration hospitals and offices, F. R. St. John, director of VA's library service, said.

VA's 74 general medical and surgical hospital libraries had 83,000 volumes; its 34 neuropsychiatric hospital libraries, 43,000, and its 18 tuberculosis hospital libraries, 15,000.

Medical libraries in VA's 13 branch offices accounted for nearly 8,000 books and journals, and the library in VA's Central Office in Washington, D. C., had a stock of almost 9,000 works.

During April, the circulation of books and magazines in VA medical libraries totaled over 42,000—about 30 percent of the entire stock.

Health Emergency Unit Established.—Dr. Norvin C. Kiefer is to conduct the newly established Health Emergency Planning unit in the Public Health Service. He will direct the unit with the assistance of Gordon E. McCallum, sanitary engineer. The unit will cooperate with the National Security Resources Board, the Office of Civil Defense Planning of the National Military Establishment, the Military Services and State Health Departments, as well as professional and voluntary organizations, to plan a coordinated program for safeguarding public health during a national emergency.

Existing facilities within the Public Health Service will be surveyed in order that those with significance during a national emergency can be readily integrated with civil defense plans.

The new unit will also draw plans for more comprehensive public health catastrophe services to be offered in response to peacetime emergency requests from States.

Twenty-First Anniversary Year of Harofe Haivri.—The appearance of Volume 1, 1948 of the *Harofe Haivri,* the Hebrew Medical Journal, inaugurated the 21st successful year of its publication under the editorship of Moses Einhorn, M.D. The Journal's contents are not confined to technical medical topics but is divided into several sections covering a variety of related subjects of interest to the medical profession.

The original articles are summarized in English to make them available to those who are unable to read Hebrew. For further information you can contact the editorial office, 983 Park Avenue, N. Y.

IATA Holds First Medical Panel Meeting.—The newly-organized Medical Panel of the International Air Transport Association held its first meeting in Toronto during the nineteenth annual meeting of the Aero Medical Association, in June. The IATA medical panel met with Sir William P. Hildred, director general of IATA, to discuss its terms of reference and survey medical problems now under active consideration by the airlines.

Set up by IATA to deal with all medical aspects of international airline operations, the Panel is composed of leading physicians nominated by IATA member companies. Dr. Francis N. Kimball, long identified with aviation and now consulting medical officer to a number of United States airlines, is acting secretary.

Periodic Check-Ups Urged for Vets Treated For Syphilis.—The Veterans Administration urges all vets who were treated for syphilis with penicillin during the war, to undergo periodic check-ups so as to prevent recurrence of the disease.

Between 20 and 30 percent of the cases treated with penicillin are reported to be "failures," contrary to the popular belief that the drug is a "cure all" for venereal disease, Dr. Bascom Johnson, Jr., assistant chief of dermatology and syphilology in VA's Department of Medicine and Surgery, declared.

Veterans who suffered from this disease are urged to report to their private physician or their local health department.

Only veterans with VD adjudged to be service-connected are eligible for prompt treatment in VA outpatient clinics or hospitals. Veterans with nonservice-connected VD are eligible for treatment only in hospitals and then only when they say they cannot afford to pay for treatment elsewhere.

Dr. Johnson also urged veterans who contracted gonorrhea during the war and who did not have follow-up blood tests for syphilis once a month for four months following treatment, to report for check-ups and treatment, if necessary.

If gonorrhea is treated with penicillin it sometimes aborts the signs of syphilis contracted at the same time, Dr. Johnson warned.

Employment Program Designed To Help Handicapped Vets.—The Veterans Administration has established an intensive employment and training program for veterans in its domiciliary homes, designed to help them become self-supporting.

These men have illnesses and disabilities essentially chronic in nature, usually not susceptible of cure or decided improvement by regular hospital treatment. Many require rehabilitation to hold jobs in keeping with their reduced physical capacities. A number of the positions—including domiciliary attendants, readers to the blind and company commanders—have been set aside exclusively for veterans in homes.

Qualified veterans also may be appointed to

other positions such as clerks, library assistants, telephone operators, guards, barbers, mess attendants and mechanics' helpers. A competent personnel service considers the ability, background, interests and the state of health of the veteran concerned before placing him in a position. The training phase of the program is limited only to those members who meet required physical standards. Each VA home prepares its own training program, utilizing existing facilities.

Metropolitan Life Campaigns Against Child Accidents.—A reduction in the number of child accidents, both fatal and nonfatal, is the objective of an intensive child safety campaign to be launched this fall by the Metropolitan Life Insurance Company, New York, with the cooperation of the U. S. Children's Bureau, the American Academy of Pediatrics, and the National Safety Council.

It has been reported that accidents are the leading cause of death among children of more than one year of age, with death rates per 100,000 population far surpassing those of any other cause. For example, in 1946, according to the experience of the Metropolitan among its Industrial policy-holders, the accident death rate among children from 1 to 4 was 48.1 per 100,000, as compared with a rate of 28.2 per 100,000 for pneumonia, the next leading cause of death. It is significant that at this age group there has been little improvement in the past 15 years, although the death rate from disease has been cut approximately 67 percent.

In the age group 5 to 9, the death rate for accidents was 25.7 per 100,000 as compared with a rate of 4.6 for rheumatic fever and organic heart disease, the next cause. In the age group 10 to 14, the death rate for accidents was 20.8, and that for rheumatic fever and organic heart disease, 7.2.

The present relatively low death rates from all nonaccident causes, as compared with those of but a few years ago are the result of advances in medical science and concentrated efforts in the field of child health. Efforts must now be intensified to bring about a reduction in the number of child accidents as well. The program is planned to encourage public health, medical, safety, and other organizations, as well as the general public, to give even greater attention to the child safety phase of the child health program.

Research Fund For Heart Disease Provides Fellowships.—An additional $103,000 in research funds for heart disease was announced by the Life Insurance Medical Research Fund, New York, raising to nearly two million dollars the amount provided by the Fund since its organization in December, 1945. The awards include 12 student fellowships, three post-graduate fellowships and nine grants in aid to hospitals and universities. Largest grant in aid announced by the Fund is $18,375 which will go to Western Reserve University, Cleveland, for research by Dr. Normand L. Hoerr.

ACS Expects 15,000 At National Meeting.—Chemicals for agriculture will be the highlighted topic of discussion when an expected 15,000 chemists and chemical engineers participate in the 114th national meeting of the American Chemical Society, which will be held in three sessions in Washington, D. C.; St. Louis, Mo., and Portland, Ore., August 30 to September 17.

The Eastern Session, in Washington, will run from August 30 to September 3; the Midwest Session, in St. Louis, from September 6 to 10, and the Western Session, in Portland, from September 13 to 17.

The divided national meeting, first in the Society's seventy-two-year history was arranged to enable the maximum number of the 57,000 members to attend, according to Dr. Thomas, who is executive vice-president and technical director of the Monsanto Chemical Company, St. Louis.

Recent developments in virtually every field of chemical science and technology will be reported in several hundred papers at a total of 120 technical sessions to be held in the three cities, under the sponsorship of eighteen professional Divisions of the Society. One hundred and twenty-seven Local Sections of the A.C.S., the world's largest professional association of scientists, will be represented.

Seven awards for outstanding achievement, including the Priestley Medal, highest honor in American chemistry, will be presented at the meeting, and memorial programs will be conducted for two distinguished chemists, Baron Jons Jakob Berzelius, Swedish creator of the modern system of chemical symbols, and Dean Frank C. Whitmore of Pennsylvania State College, president of the Society in 1938, who died last year.

Chemistry's latest contributions to alleviation of the world food shortage, to the improvement of agricultural techniques and products, and to the unceasing war on disease will be stressed at the Washington session. Ten of the Society's Divisions will participate, under the general chairmanship of Dr. Benjamin Douglass Van Evera, professor of chemistry and coordinator of scientific activities at George Washington University.

Progress in atomic research will be reported at a panel on "Nuclear Reactions" at which Dr. Isadore Perlman, University of California authority on radioactive elements, will preside. The Division of Physical and Inorganic Chemistry will sponsor this and other discussions in a variety of chemical fields, and will join with the Division of Colloid Chemistry in a session dealing with the chemical properties of clays.

Animal metabolism and substances inhibiting growth will be the theme of chemists of the

Division of Biological Chemistry, and the chemistry of natural resources, and chemical literature will be considered by the Division of Chemical Education.

More Thyroid—A Must—During Pregnancy.—Dr. John R. Peters, John Slade Ely professor of medicine, Yale, recently reported that many miscarriages of early pregnancy take place because women do not possess a sufficiently high concentration of thyroid hormone in the blood. The clue to many of these "spontaneous abortions", the professor stated, can be found in the degree of concentration of precipitable iodine in the blood serum of a woman. The iodine is found in exceedingly small amounts in the blood but exerts a powerful influence.

The report went on to say that non-pregnant women normally have a concentration of from four to eight millionths of one percent of this precipitable iodine. When they become pregnant, the concentration rises higher, ranging from eight to ten millionths of one percent. In many cases, where pregnant women have failed to register such a rise, miscarriages have occurred early in pregnancy.

The Yale investigations were aided by the development of accurate methods for determining the concentration of serum iodine in the body. When there are disorders of the thyroid gland (such as those present in the diseases of goiter or myxedema) the precipitable iodine of the serum—which is that fraction of iodine which is firmly bound to the proteins of the serum—shows with great accuracy just how the thyroid is operating. Scientists believe that most or all of the precipitable iodine is contained in thyroxine, the active thyroid hormone.

Dr. Evelyn B. Man developed this technique of measuring the concentrations of precipitable iodine in the body.

They studied one group of 22 women from the second month of pregnancy to the day of delivery. Precipitable iodine in normal, non-pregnant women ranged from 4 to 8 millionths of one percent—in the pregnant women this concentration was actually 6.2 to 11.2 millionths of one percent with an average value of 8.3 millionths of one percent.

This high concentration, Dr. Peters pointed out, "is already high as early as it is possible to make a diagnosis of pregnancy, as soon as the Ascheim-Zondek test is positive. Furthermore, although it may fluctuate somewhat in the course of pregnancy, it has, as far as can be determined from the data thus far collected, no tendency to deviate in one direction or the other as pregnancy progresses."

Shortly after delivery of an infant has taken place, the mother's concentration of precipitable iodine seems to fall sharply and rapidly to its previous rate prior to conception.

Describing charts which he showed to the assembled physicians, Dr. Peters pointed out that many threatened miscarriages were arrested by administration of thyroid products to the pregnant women being observed.

"As soon as it seemed even possible that a low serum iodine might portend miscarriage," he said, "those responsible for the medical care of these women could not refrain from administering thyroid. The direct line of investigation can, therefore, progress only as material is accidentally obtained."

He also stated that low serum iodine is not the only cause of miscarriage.

In four cases, the precipitable iodine did not rise above 6 millionths of one percent within the first four months of pregnancy from a previously low concentration. In every case it did rise, however, under the influence of thyroid therapy and eventually approached 6 millionths of one percent.

Evidently, low serum iodine is no obstacle in advanced stages of pregnancy, Dr. Peters reported. When the iodine fell below 6 millionths of one percent at later periods of time, the pregnancy was not interrupted.

There is no way of telling, prior to the onset of pregnancy, whether or not a woman will have a sufficiently high concentration or precipitable iodine to avert the threat of a miscarriage. In 10 women who did have miscarriages, the concentrations prior to pregnancy did not differ markedly from those who carried their children to full term.

In addition, failure of the iodine to rise in the normal manner during pregnancy does not indicate a long-standing deficiency of the thyroid gland, Dr. Peters pointed out, but rather an "improper reaction" to the state of pregnancy.

Dr. Peters offered evidence to counteract two false notions concerning iodine activity—he could not support the assertion that thyroid deficiency is a frequent cause of sterility nor discover any relationship between a concentration of precipitable iodine and the toxemias of pregnancy, illnesses which take place during late pregnancy.

In analyzing his findings, he said: "This must be considered as only a preliminary report and most of the deductions must be regarded as tentative hypotheses. The data are too incomplete to warrant definite conclusions.

"It does seem clear that for some reason the precipitable iodine of the serum rises during normal pregnancy. The evidence to date suggests also that if the serum iodine does not rise abortion is likely to occur in the early months of pregnancy."

Book Reviews

Cancer Biopathy

The Discovery of the Orgone. Vol. 2 The Cancer Biopathy. By WILHELM REICH, M. D. Translated by Theodore P. Wolfe, M. D. Illustrated. New York, N. Y.: Orgone Institute Press, 1948. Pp. xxi + 409. Price $8.50.

Readers who try to keep apace with current events will not be greatly surprised at a new angle on Sex,—there seems to be no end to these angles. The German author of this text has written some 18 volumes dealing with sex in its various phases. Volume I which preceded the present text had to do with, The Function of the Orgasm.

Orgone is "a basically new cosmic energy . . . present everywhere . . . governed not by mechanical but by functional laws". We are asked to give up the air germ theory and to substitute endogenous infection, admitting the role of the emotions in organic diseases.

Sexual pathology is the central theme in this study of cancer which is looked upon as a general disease with local manifestation in a tumor. A study of living cells, not of dead ones, magnified at least 2000 times reveals much.

"Traditional cancer research . . . starts out from erroneous premises and proceeds on the wrong track. We need to study the secretions and excretions and the blood of cancer victims." This would lead to early diagnosis. The microscope shows many small lancet-shaped bodies which are not seen below 2000X which the author calls T-bacilli. These result from tissue degeneration and do not arrive via the air.

"Many cancer cells have a tail and move in the manner of fish." They have infinite forms, the small ones being more malignant than the larger; e. g., the small-cell sarcoma of youth. At first there is starvation of the cells with "carcinamatous shrinking biopathy." The tumor develops in suffocating tissues, evidenced by excess of carbon dioxide and the presence of lactic acid.

While to the casual reader, the theories in this book may seem fantastic, they are not to be cast aside lightly. Unfortunately, the descriptive text is prolix, verbose, and not easy to read and understand. However, the postulates are capable of verification or the opposite, and should be studied in detail before being rejected. The riddle of cancer is not yet solved, but the theory that it is a general disease with local manifestations has much in its favor.

AMA Historical

A History of the American Medical Association, 1847-1947. By MORRIS FISHBEIN, M. D., with the biographies of the Presidents of the Association by WALTER L. BIERRING, M. D., and with histories of the publications, councils, bureaus, and other official bodies. Philadelphia and London: W. B. Saunders Company, 1947. Pp. 1226. Price $10.00.

This is an extremely complete volume. Of course, it is a history of the American Medical Association for 100 historical years. But it is much more than that. It is a reflected history of the times—of the social, economic, political and medical progress and regression that took place in this century of progress.

We start with Nathan Davis, the first president, whose humble origin occurred in a log cabin. He rode a horse instead of a Buick. So we go down the line of one hundred and one presidents and the times they mirrored.

Through wars and prohibition, through panics and depressions we find the medical profession playing its part. It is a history of the highlights of American medicine and in turn its relationship to the very history of the United States of America.

Cosmeticology

Modern Cosmeticology. By RALPH G. HARRY, F. R. I. C., head of the cosmetic department, Beecham Research Laboratories, Ltd. Third revised edition. Illustrated. Brooklyn, N. Y.: Chemical Publishing Co., Inc., 1947. Pp. xv + 515. Price $12.00.

The book before us is the second enlarged and practically rewritten edition of a best seller of a few years back. Harry has given the English reading physician of the United States a spot book—good for him right now in his own balliwick. Harry quotes extensively from well known American dermatologists; from the men in England and on the Continent. He knows the literature thoroughly.

The purpose of this edition is to direct the physician practitioner in the field of dermatology, to better looking as well as effective remedies in the treatment of the ill. The purely cosmetic practitioner is offered an up-to-the-minute publication of materials and procedures. This book is no mere compilation, however. Harry has made his own contributions. His articles appear in the, *British Journal of Dermatology* and are repeatedly reprinted and republished. Needless to say, many of his findings have been rehashed with little reference to their original author.

The physician practitioner of the United States will learn much from this book. A casual glance will help but intense study will help more. The superficial formula copying reader will find what he seeks. The student will discover basic information. The research worker will learn in what direction to burrow his way to fame and fortune. No phase of the skin, either as an outer covering or as an organ of the body, has been omitted.

A review is supposed to be incomplete unless some few errors are noted. Neither the Spans nor the Tweens are found; these are very recent additions to the materiel of the cosmetician. A few names are misspelled. Some few typographical errors were noted—none very harmful.

The publishers have done well by the author and by the book buyer. Colored, and black and white illustrations abound. The paper and printing are excellent. The binding permits frequent reference to the book with no danger of harming it.

Each physician; each cosmetician; will find something of value to him and to his art and science through Harry's, *Modern Cosmeticology.*

Medicine In Review

Medicine in the Changing Order. Report of the New York Academy of Medicine Committee on Medicine and the Changing Order. New York: The Commonwealth Fund, 1947. Pp. xviii + 240. Price $2.00.

The New York Academy of Medicine is about to celebrate its centennial. It is fitting that at this time the Academy's Committee on Medicine and the Changing Order submits its report. The Committee's forty-eight members (both laymen and prominent members of medicine, dentistry, and nursing) after deep investigation have drawn a number of sensible conclusions regarding the methods of correcting present day deficiencies of medicine.

The basic choice of free initiative-versus government planning is the controversy of modern medicine. To arrive at conclusions, the committee was divided into sub-committees which were assigned the following subjects and names: Medical Education; Graduate and Postgraduate Medical Education; The Internship; the Hospital; the Administration of the Public Health Services; Extension of Medical Services; the Cost of Diagnostic and Consultant Services; Industrial and Rural Medicine; Nursing; Dentistry.

These subcommittees have, surprisingly enough, not side-stepped any of the issues involved. An example of the clear style of writing and honest opinion is, "the Committee recommends that comprehensive medical services be extended by the use of voluntary non-profit insurance, using group practice units wherever feasible and government subsidy wherever necessary."

For rural areas the Committee suggests that hospitals located in small trading centers could serve a scattered population, and at the same time contact larger centers if need be for advice or consultation. How this could be financed is explained. Convincing arguments for the extention of the Public Health Services is presented.

This report has been four years in the making. It shows thoroughness in preparation and soundness in its recommendations. Physicians who are interested in how our complex ever changing social and economic trends will affect their practice, their future, and their pocketbooks, should read this small volume.

Hypnosis

Hypnotherapy: A Survey of the Literature. By Margaret Brenman, Ph. D., director of the Division of Psychology, The Menninger Foundation; professor of psychology, The Menninger Foundation Center of the Department of Psychology, University of Kansas; Merton M. Gill, M. D., associate psychiatrist, assistant director, Department of Research, The Menninger Foundation. The Menninger Foundation Monograph Series No. Five. New York, N. Y.: International Universities Press, 1947. Pp. 276. Price $4.50.

This is Number five in the Menninger Foundation Monograph Series. Its preparation and publication was made possible by a grant from the Josiah Macy, Jr., Foundation, and through the kind offices of its director, Dr. Frank-Fremont Smith.

The four case studies concern one of *anxiety hysteria; hypnotherapy for mental illness in the aged,* which is reported as an hysterical psychosis at age 71; some techniques of hypnoanalysis by Gill and Menninger; and, finally, *self-starvation and compulsive hopping with paradoxical reaction to hypnosis* by Brenman and Knight.

Chapter four on Therapeutic Applications, is of most interest to the clinician. Pierre Janet is quoted as saying that there is very little danger attached to hypnosis, but these authors (B. and G.) admit contraindications such as incipient schizophrenia and the "circular insanities". There is some danger of establishing an obsession, and of too great dependence upon the therapist.

World War II has, however, emphasized the power of suggestion under hypnosis or under pentothal sodium wherein the patient is shown the falsity of certain fixed ideas, and is told how to separate himself from the remembered horrors of certain war experiences. In any case, several sittings, and many conferences are usually necessary both in the normal and hypnotic states. It is a time-consuming process, but if it restores a given mind to something even approaching the normal, it will be a boon to that individual and to all those who care for him.

This book will be a valuable supplementary reading for all who are trying to "minister to a mind diseased."

Neuroanatomy

Human Neuroanatomy. By Oliver S. Strong, formerly professor of neurology and neurohistology, College of Physicians and Surgeons, Columbia University, New York; and Adolph Elwyn, associate professor of neuroanatomy, College of Physicians and Surgeons, Columbia University, New York. Second edition, revised. Illustrated. Baltimore, Md.: The Williams & Wilkins Co., 1948. Pp. x + 442. Price $6.00.

The very complicated structure of the nervous system continues to be emphasized in the several books on neuroanatomy which have appeared in the preceding few years. This book in its second edition, as well as the other similar books which have appeared, bespeak the importance of medical and surgical neurology in practice. It continues the effort made in the first edition to emphasize the functional and clinical significance of the structural mechanisms and arrangements, and of the complicated communication apparatus which governs the various activities of the other structural parts of the body.

The first part of the book (Chapters I-VIII) is concerned with the general organization and meaning of the nervous system, its embryology and histological structure, and with some fundamental neurological problems as they apply to man. Because of new developments, the authors have expanded the sections of segmental and peripheral segmental innervation. Thereafter, there is an analysis of the functional components of the spinal nerves and of the various receptors and effectors.

The earlier chapters are more than usually extensive because the book aims to be self-sufficient, and for better understanding. The descriptions of the arterial, venous and drainage systems of the brain follow.

The second and larger part (Chapters IX-XX)

is devoted to the architectural structure of the central nervous system and is "applied neuroanatomy." Special features of this part are the many fine photographs, both gross and microscopic, of the human brain and spinal cord, the great wealth of anatomical detail, and the discussion of the structural mechanisms in the light of clinical experience. Organic structural continuity is attained by judicious repetition and overlapping and by constant reference to related previously discussed topics.

The plan of exposition is substantially the same for each topic. The gross external and internal structure and relationships are further made clear with the aid of graphic illustrations and by a series of excellent microphotographs of human material which pay special attention to their three-dimensional structural mechanisms, and to their clinical significance. The illustrations are wisely scattered in the text, in proper relation to the parts and levels studied.

All in all, the book, although thoroughly revised is substantially the same as its first edition. Reference to the newer work has been made wherever possible, but some, especially in the field of neurophysiology, was not included because of its still controversial state.

The plan of exposition, the clear style, and the excellent illustrations continue to bear witness to the experience and knowledge of the authors, to the manufacturing skill of the publishers, and makes the book an important addition to other similar neuroanatomical literature.

Therapeutics

The Pharmacological Basis of Therapeutics. By LOUIS GOODMAN, M. D. and ALFRED GILMAN, Ph. D. New York, N. Y.: Macmillan Co., 1948.

This book leads all others in popularity because of its three objectives—the correlation of pharmacology with related medical sciences, the reinterpretation of the actions and uses of drugs from the viewpoint of important advances in medicine, and the placing of emphasis on the applications of pharmacodynamics to therapeutics. Although pharmacology is a basic medical science in its own right, it borrows freely from and contributes generously to the subject matter and technics of many medical disciplines, clinical as well as preclinical. The correlation of strictly pharmacological information with medicine as a whole is essential for a proper presentation of pharmacology to students and physicians. Furthermore, the reinterpretation of the actions and uses of well-established therapeutic agents in the light of recent advances in the medical sciences is as important a function of a modern text book of pharmacology as is the description of new drugs.

In many instances these new interpretations necessitate radical departures from accepted but outworn concepts of the actions of drugs. Lastly, the emphasis throughout the book, as indicated in its title, has been clinical. This is mandatory because medical students must be taught pharmacology from the standpoint of the actions and uses of drugs in the prevention and treatment of disease.

To the student, pharmacological data *per se* are valueless unless he is able to apply his information in the practice of medicine. This book has also been written for the practicing physician, to whom it offers an opportunity to keep abreast of recent advances in therapeutics and to acquire the basic principles necessary for the rational use of drugs in his daily practice.

OBSTETRICS BOARD REQUIREMENTS CHANGE AT ANNUAL MEETING

The annual meeting of the American Board of Obstetrics and Gynecology, held in Washington, D. C., brought about the following changes in board requirements and regulations. These relate both to candidates, and to hospitals conducting residency services for training.

1. The ruling that applicants must receive adequate training in both obstetrics and gynecology has been defined as meaning a minimum of six months, full-time, in the branch of either obstetrics or gynecology relegated to a minor role in a candidate's training and preference for practice.

2. Acceptable preceptorship training is defined.

3. The present regulation requiring at least six months of practice in the specialty following the completion of an acceptable training period, has now been extended, effective December 31, 1949, to a requirement of two years post-training practice limited to the specialty.

4. Specific requirements for approval of hospital services for residency training are outlined.

5. Effective immediately, there will be no further temporary approvals of hospital services for residency training. It is planned that all hospitals holding any type of residency training approval will soon either be resurveyed or initially surveyed by the Council on Medical Education and Hospitals of the A. M. A. so that all future approvals, new or old, will be based entirely upon inspection following application. It is expected also that certain resurveys will result in withdrawal of present residency approval from institutions where the educational and training standards are not being maintained.

The next scheduled examination (Part I), written examination and review of case histories, for all candidates will be held in various cities of the United States and Canada on Friday, February 4, 1949. Application may be made until November 1, 1948. Application forms and Bulletins are sent upon request made to: American Board of Obstetrics and Gynecology, Inc., 1015 Highland Building, Pittsburgh 6, Pa.

Personals

Dr. Jefferson Browder is the new director of the Department of Surgery of the Long Island College Hospital, Brooklyn. Dr. Browder, diplomate of the American Board of Surgeons and of the American Board of Neurosurgeons, succeeds *Dr. Emil Goetsch,* the noted authority on the thyroid gland. He is retiring as director after 29 years in the post but will continue his professional activities as an attending surgeon at the hospital. The doctor also has accepted an invitation to serve as a member of the Board of Regents of the Hospital.

Dr. Browder is the author of more than 50 technical articles on various aspects of research and surgery of the brain and the nervous system which have appeared in medical publications including the American Journal of Surgery, the Archives of Neurology and Psychiatry, the Archives of Ophthalmology, the Annals of Surgery and the Archives of Surgery.

Dr. Edward D. Palmes has been appointed assistant professor of preventive medicine, New York University College of Medicine, and assigned to the Laboratory of Industrial Toxicology, initial unit of the Institute of Industrial Medicine.

Dr. Palmes was formerly with the National Institute of Health, Division of Industrial Hygiene, Bethesda, Md., where he conducted research in the toxicology of beryllium and tungsten. During World War II, he was with the Armored Medical Research Laboratory, Ft. Knox, Ky., where he investigated the definition and methods of reduction of chemical hazards to which soldiers are exposed. He later conducted research on human thermal balance at Ft. Knox.

The appointment of *Dr. Marjory J. Nelson,* chief medical inspector in the Mount Vernon, N. Y., public schools since 1944, as Barnard College physician was announced recently by Mrs. Austin McIntosh, dean of the college. Dr. Nelson will succeed *Dr. Gulielma F. Alsop,* who retired after serving as college doctor for thirty-five years.

Dr. Nelson is a graduate of Barnard College and the Cornell Medical College. She was in general practice in Mount Vernon for nine years.

Dr. Ivan W. Brown, Jr., director of Duke University hospital blood bank and instructor in surgery at the university's school of medicine, has been selected assistant technical director of the Red Cross National Blood Program.

During World War II, Dr. Brown worked with the British Transfusion Service and also went overseas as a member of the surgical staff of the 65th General Hospital. He had charge of the hospital's shock ward and blood bank and also served on the neurosurgical staff.

Upon his retirement as chairman of the board of directors of United Medical Service, *Dr. Nathan B. Van Etten* who has served the doctors' plan since its inception was presented with an illuminated scroll in recognition of the "enduring appreciation and affectionate regard of his fellow directors."

The presentation was made at a recent combined meeting of the board of directors of Associated Hospital Service—New York's Blue Cross Plan and United Medical Service.

Dr. John F. Erdmann, received the honorary degree of Doctor of Science at New York University's 116th Commencement exercises.

Dr. Erdmann is the senior surgeon of New York and a consultant in twelve of the metropolitan hospitals. With a record of sixty-one consecutive years of practice, entailing the performance of more than twenty thousand operations, he is still active.

Dr. Frank K. Bartlett of Utah, physician and surgeon, was among the seven distinguished alumni of the University of Chicago awarded citations of merit at the annual alumni assembly.

A physician and surgeon in Ogden for the past 34 years, Dr. Bartlett has been chairman, chief of staff and director of the Thomas D. Dee Hospital during the past 25 years. Three additions to the 300 bed hospital building have been made during the past ten years under the guidance of Dr. Bartlett. The nursing school, connected with Dee hospital, has also been enlarged as a result of Dr. Bartlett's interest in making it a training center for northern Utah.

The citations, established during the university's fiftieth anniversary celebration in 1941, are given in recognition of public service to the community, the nation and humanity. Since their establishment seven years ago, citations have been awarded to 239 university alumni.

Dr. Clifford H. Kalb, Milwaukee, has been designated as director of a newly formed Medical Research Bureau of the Rexair Division of Martin-Parry Corporation. This year-long project will deal on the effects of house dust, and the effectiveness of a churning water bath in trapping such dust and thereby reducing its incidence in the average household.

An important aspect of this research will be a study of the pollen and mold spore components of house dust, including their nature, circulation pattern, and means of elimination. Particular attention will be paid to possible value of settling dust in water as a means of controlling it in the home.

Cultural characteristics of mold forms and their relation to clinical allergies are of special interest to Dr. Kalb, a former fellow in the Allergy Unit, Graduate School of Medicine, University of Illinois. He served with the Army in the Southwest Pacific and while on duty as a medical officer in the tropics became interested in molds and their relation to respiratory diseases.

Dr. Kalb is medical director of Milwaukee State Teachers College and clinical assistant and lecturer in immunomycology in the Allergy Unit of the Graduate School of Medicine, University of Illinois.

The recipient of the Gold Headed Cane, was passed on from *Dr. James J. Waring,* professor of medicine at the University of Colorado School of Medicine, Denver to *Dr. John G. Ryan,* associate professor of medicine, for his devotion to students and patients over a period of many years. This tradition seems to have its origin in England. A cane with a gold top was, at least in Britain, an essential part of the physician's equipment in the eighteenth century. John Radcliffe (1650-1729) who attended King William and Queen Mary, carried such a cane and passed it on to his successor in practice, Richard Mead.

New York Hygiene Department Promotes New Formula For Bread Making

A new bread formula, adding considerable nutritive value to the flavorful loaf now produced, has been developed by the New York State Department of Mental Hygiene for use in their institutions, Commissioner Frederick MacCurdy recently announced.

The new formula, which includes 6 percent full-fat soy flour and 8 percent fat-free dry milk solids, in addition to standard enriched white flour, is an outgrowth of Governor Dewey's long-range program for improvement of food in state mental hospitals and schools. Research studies were initiated by the department three years ago with the appointment of an expert in dietetics and institutional feeding as director of nutrition services for all of the mental institutions.

With the cooperation of a leading flour milling company, Cornell University's department of nutrition, and the American Dry Milk Institute, experiments were conducted by the food service department to devise improved recipes for enriched white bread that would increase the protein, vitamin and mineral content of the daily diet.

The state institutions, all of which bake their own bread, were instructed to use dry skim milk and soy flour in the bread formulas they were developing for their own use. Varying amounts were used by the institution food managers who reported to the central office on the degree of success they achieved. The Standard formula finally arrived at was tested in two selected institutions, one with rather old-fashioned bakery equipment and the other having a modern baking plant with new machinery. Under both conditions the results were eminently satisfactory, Dr. MacCurdy indicated.

"The chief objective in introducing an improved bread in state hospitals and schools," the commissioner said, "is to provide in a simple, practical, inexpensive way additional amounts of certain food elements in which the ordinary diet is frequently deficient. The elements involved, found in such expensive foods as meat, milk and butter, would have required a prohibitive increase in the cost of the dietary if added in any other way."

The added food value of the bread produced by the Department of Mental Hygiene is indicated in the following table. It compares the new loaf with an analysis of the average commercial loaf of enriched white bread as reported by the Philadelphia Child Health Society.

Amounts Per Pound of Bread

	Average Commercial Loaf	*New York State Loaf*
Protein (grams)	36.3	61.5
Fat (grams)	17.3	16.7
Carbohydrates (grams)	227.5	309.9
Calories	1211	1636
Calcium (grams)	.204	.48
Phosphorous	.445	.845
Iron (milligrams)	8.2	14.6
Vitamin A (units)	.....	627
Thiamin (micrograms)	1090	1977.8
Riboflavin (micrograms)	699	1806.5
Niacin (milligrams)	10.0	140.5
Ascorbic acid (milligrams)	.....	2.21

"New York State has taken the lead," Dr. MacCurdy declared, "in producing a bread that not only adds needed food elements to the daily diet, but is more palatable and has better keeping qualities than the average high-grade loaf. This significant contribution to the general health and well-being of the patients in our mental hygiene institutions has been achieved at no increase in cost—in some instances at a slight saving.

"The formula has been made available to the institutions of other state departments and to the baking industry. It is hoped that its full benefits in dietary enrichment will eventually be passed on to the general public."

SURGICAL DIGEST

By RICHARD A. LEONARDO, M. D.

Rochester, N. Y.

Ancient Culture and Modern Science Natural Philosophy really began with the prediction of the eclipse of 585 B. C. by Thales of Miletus. Subsequent to this era Greek philosophy flourished and progressed for the next 1000 years until the Athenian schools were closed by the Emperor Justinian, an ardent Christian. This Graeco-Roman culture reached maturity and then decayed and died and only after the darkness of the Middle Ages had become lifted again did modern science start afresh, in the period of the Renaissance.

Modern science is guided by logical theories which are evolved as a result of careful observation in carefully controlled experiments and it seeks to discover, in part at least, the laws of cause and effect. Our motive, especially that of pure science, is our desire to learn the true nature of things and how they behave under certain conditions, often irrespective of whether such findings have practical application to our daily life or not. The differences of objective between ancient culture and modern science may be briefly summarized by stating that the ancients were primarily interested in defining the substance of things whereas modern investigations are principally engaged in studies that formulate sequences of events.

Periarteritis Nodosa Pathologically, there is an inflammation of the small arteries with exudative processes and hyaline necrosis. When involving some of the vessels in the abdomen, an "acute abdomen" has occasionally been diagnosed and a laparotomy done. Presumably, the condition may be an allergic manifestation, and the diagnosis, though difficult to make, has been made more often, recently, especially since the great general increase in the use of sulfa drugs in therapy. Often, the ophthalmologist can diagnose the case for us, especially if he finds characteristic involvement of the choroidal and/or retinal vessels with the formation of fusiform aneurysms. According to Harbert and McPherson, another important ocular sign of this condition is scleral necrosis. Surgeons should be on the lookout for this disease, especially when confronted with a diagnostic problem. The last word, of course, has not yet been spoken on this very interesting and rare pathologic condition.

Artificial Insemination It is seldom needed to perform this little operation with the husband's semen; usually that of an acceptable donor is used, providing legal consent of all parties is obtained. Occasionally sterility is due to "hostile secretions" from the cervix that may persist in spite of adequate surgery, as cauterization or conization, of the cervix. In such a case, the husband's semen is injected directly into the cervical canal, but intrauterine injections are not advisable. The important point is to try to introduce the semen up and beyond the zone of hostile secretion. In many such cases a successful result may occur, especially if this procedure is done on or about the date of ovulation. In addition to possible legal entanglements, the surgeon or gynecologist must also give consideration to possible religious difficulties. He should know, as Dr. S. Abel says, that many of the Catholics, Jews, and Episcopalians are opposed to this procedure when the semen used is not that of the husband.

Fistula in Ano J. M. Kenney had obtained primary healing in these cases by careful dissection of the tracts, preservation of the sphincters, infiltration of the dissected tracts with penicillin, avoidance of all dead spaces, and careful closure of the mucosal incision. Similar results can be obtained by a partial Whitehead operation, in my experience.

Needle Biopsy of the Liver First proposed by Lucatello in 1895, this procedure has recently come into considerable favor. It is usually performed under local anesthesia upon an enlarged liver. When the liver is not enlarged and does not project beyond the costal margin, then to safely obtain a needle biopsy, one has to resort to the aid of peritoneoscopy as by this means the liver surface is visualized and the needle can then be inserted intercostally or subcostally under direct guidance. The needle frequently used consists of an outer sheath and an inner needle with a cutting, serrated edge. After insertion, it is twisted to cut free a small plug of liver tissue, and then this biopsy material is aspirated by a syringe.

Needle biopsies are especially useful to diagnose cirrhosis, hepatitis, malignancy and other lesions and often their results will make an exploratory operation unnecessary. However, they should only be done on hospitalized patients, as otherwise an occasional fatal hemorrhage follows such a procedure. In hospitals such a complication can be treated by surgery, transfusions, etc. so that fatalities are prevented.

Synoviomata These are very rare malignant tumors arising from synovial membranes, being most commonly found in the popliteal space. Usually they are mistaken for benign growths and a simple local excision is done. Many of these cases, therefore, recur and eventually require amputation. This may be avoided in some cases if the surgeon is on the lookout for synoviomata and if he performs a sufficiently radical excision at the first sitting. Unless proven definitely benign, all synovial tumors must be carefully followed. They have a tendency to remain localized for a long time then rather suddenly they grow rapidly and metastasize.

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AUGUST, 1948

Medicolegal Notes

Conflicting Medical Opinions as to Disability

Where the Workmen's Compensation Board and the Court of Common Pleas have arrived at opposite judgments in a case upon its facts, or whether they are in accord, the New Jersey Supreme Court holds it to be its duty under the statute to determine the law and facts independently of the finding thereon in the lower courts.

A laborer operating a grinding machine was struck by the grinder on the right side, knocked backwards ten feet, raised himself with assistance, and walked half-a-mile to the employer's first aid hospital. He testified that he was bothered by pains ever since the accident, could not lie comfortable on his right side, and was not able to do heavy work. The Supreme Court held his veracity was shattered by the evidence presented by the employer.

He remained away from his employment for nine and a half weeks and was compensated for temporary disability for that period. Out of 85 days he worked 57. Before the accident he was not a steady worker. He made no complaint on returning to work of any illness or existing pain. He quit his work and was not discharged as he contended. After returning to work he did the same or heavier work than before the accident, but he told the doctor at the time of his physical examination that he had not worked since the accident.

The court found the entire medical testimony not preponderantly persuasive and determinative because its reception into evidence was by stipulation of the parties by written statements prepared by the physicians in place of their appearance in court and submission to direct and cross examination.

A physician who examined the employe maintained that the permanent disability claim was based upon and created by pain; but that in his opinion the employe was suffering from fractured ribs and a traumatic intercostal neuritis and the pain resulting from this condition, accentuated by his age, caused him to have a 15 percent partial total permanent disability. The court said that "since pain is subjective and if the prosecutor's testimony is not to be accepted in this regard, then the opinion is not persuasive." A medical witness for the employer was of opinion the employe should become all right eventually and had no permanent disability.

The Supreme Court therefore held that the prosecutor did not carry the burden of proof by the preponderance of credible testimony that he suffered a partial permanent disability of ten percent of total disability, affirming the judgment of Common Pleas, which resulted in the reversal of the award. Bodnar v. Florence Pipe Foundry & Machine Co., 54 A 2d 234.

Injured Person's Statements at Time of Injury

In a workmen's compensation proceeding to recover compensation for the death of the employe of a glass manufacturing company, it appeared that the employe was placed at work setting-up a gas producer. The machine he was working on was not in operation, but in close proximity to it was another gas producer in operation. It was claimed that gas was escaping from the latter, some of which the employe inhaled, which aggravated and accelerated an organic heart condition which ultimately caused his death.

The Industrial Commission denied compensation.

A judgment on a jury's verdict in common pleas for the plaintiff was reversed by this Court of Appeals, and the case remanded for a new trial. But on account of the conflict of its decision with judgment of other courts of appeal in the state, the Court of Appeals certified the case to the Ohio Supreme Court, which affirmed the Court of Appeals' judgment. The Commission's denial of an award was on the ground that the injury did not arise out of and in the course of employment. Stough v. Industrial Commission, 142 Ohio St. 440, 52 N. E. 2d 992.

The Court of Appeals held that it was the intention of the Legislature in Section 231 of the Ohio General Code and kindred sections that before the statements of the doctor contained in a death certificate were to be admitted as *prima facie* evidence, such statements must be based upon the doctor's personal knowledge and not upon hearsay information.

On a new trial the trial court's judgment on a directed verdict for the employer was reversed and the case was again remanded for repeal to submit to the jury an answer by a fellow-workman of the employe that the latter told the witness when he left that he had a headache. The evidence showed he left his work early that day and vomited frequently when he got home and did not return to his work for two weeks.

This statement the court held to be part of the resgestae and admissible. The evidence showed that the deceased had been suffering from an organic heart lesion and expert testimony that the inhalation of gas fumes would aggravate the heart condition. In the death certificate, the court said, it was stated that death was caused by: "myocarditis, decompensation and enlarged heart."

The rejection of the resgestae evidence therefore constituted prejudicial error. Stough v. Industrial Commission, Ohio Court of Appeals, 70 N. E. 2d 5115.

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DR. BIETER REPORTS ON TWO OBSCURE CHEMICALS WHICH PROTECT MICE FROM POLIO

Dr. Raymond N. Bieter, professor of pharmacology, University of Minnesota Medical School, in presenting his first report at the recent International Poliomyelitis Conference, disclosed that pentnucleotide and yeast nucleic acid—vital chemicals necessary in the production of proteins essential to life—protected as many as 90 percent of mice exposed to experimental polio.

Dr. Bieter and his colleagues, whose research is supported by March of Dimes funds, conducted tests of 393 compounds for a substance which in some way would "satiate" the polio virus so that it would not attack the nucleoprotein in the central nervous system. It was in this process that they discovered the effective polio properties of the nucleic acids. The acids were discovered in 1897, but were not used until the 1930's when their beneficial effect was realized in stimulating the bone marrow to produce white blood cells. Their chief use has been in the treatment of agranulocytosis, a mysterious disease marked by sudden depletion of white blood cells.

Dr. Bieter gave this explanation of the basis for his studies.

"The growth of virus of poliomyelitis inside the cells of the central nervous system, which are high in nucleoprotein content, suggested that the marked specificity of virus for these cells indicated its need or demand for nucleoprotein for its own metabolism.

"It appeared feasible," he continued, "to make other forms of nucleoprotein or nucleic acid available to the virus within the animal in the hope that the virus might utilize this supplementary source and thereby either spare the nucleoprotein of the central nervous system of the host, or change its own immunological characteristics so that it would no longer have a marked affinity for the nerve cells."

One of the most effective compounds tested was the yeast nucleic acid. The mice were given three injections on days preceding infection and then two infective doses on the first and third days after infection. It prevented paralysis or death in 90 percent of the mice used.

Other results were gained with pentnucleotide which gave protection for as many as 66 percent of the infected mice. This compound is produced commercially whereas the other chemicals have been used primarily for laboratory experiments.

In addition, the nucleic acids showed curative effects. Without any premedication, 20 mice were given injections of MM virus. Then the acid was given on the first, third, fifth and seventh days that followed. Nine of the 20 mice survived without paralysis, Dr. Bieter reported.

This raised the possibility that nucleic acid might possess a direct anti-viral property, he reasoned. In this case, it was felt, the acid may not merely divert the virus from nerve invasion, but might kill or stop its growth in a manner resembling the action of anti-biotics against certain bacteria.

As a test, the workers kept a suspension of virus and nucleic acid in test tubes for two hours and then injected the mixture into normal mice. Up to 75 percent of the mice survived, Dr. Bieter reported, indicating that the drug may be directly toxic to the virus or that the virus, by feeding upon the acid, changed its characteristics sufficiently to lose its infective quality.

Similar in action to nucleic acids, pteroylglutamic acid was listed by Dr. Bieter as another possible potent chemical. This synthetic form of folic acid—the anti-anemic vitamin of the B-complex group which stimulates the production of red blood cells—was as effective as the nucleic acids in halting polio, and had the added advantage of being effective in a wider range of doses.

Other compounds found to be effective included the benzidine dyes, notably trypan red, in which tests 66 percent of the mice survived. In one experiment, the brains and cords of dye-treated mice that had been inoculated and survived for at least 28 days, were made into suspensions and injected into other mice. Paralysis did not develop in the new group. The virus had either failed to invade the central nervous system or had been rendered non-infective, he concluded.

Still another group of dyes, known as Azo dyes, also showed therapeutic possibilities. Fifteen compounds of this group were able to save 50 percent of the inoculated group. Although these compounds did not equal the potentialities of trypan red and a few of the other benzidine dyes, Dr. Bieter noted that the Azo dyes could be administered orally and he believes they exerted their effects directly on the virus.

Dr. Bieter was assisted in his studies by other members of the Department of Pharmacology including Dr. Harold N. Wright, associate professor; Dr. Albert Canfield and Clay E. Pardon, research associates, and Thomas O'Dell and Joseph G. Gracia, research assistants.

Dr. Aykroyd Reports On Rice Deficiencies

Dr. W. R. Aykroyd, director of the Nutrition Division of Food and Agricultural organization said that food deficiency diseases are common in rice eating countries. The doctor spoke at the recent meeting of the Fourth International Congresses on Tropical Medicine and Malaria where he informed those present that the major region for rice cultivation is in India, South China and South Asia.

Of all the rice promoting diseases is beriberi. Although relatively satisfactory methods of treating beriberi with extracts of rice polishings, have been developed for some time, progress in preventing beriberi in the general population has been relatively low. For example, 18,582 and 14,668 deaths from adult and infant beriberi respectively were reported in the Philippines in 1946. Dr. Aykroyd laid special emphasis on infant beriberi, a disease which is often unrecognized. The disease in its acute form leads to the sudden death of breastfed infants during the second to the fourth month of life. If recognized it can be effectively treated by the timely injection of thiamine.

Numerous other deficiency diseases occur more frequently among the rice-eaters than among wheat-eating populations in general. Experience in prison camps in the East during the war has added considerably to our knowledge of deficiency diseases. A striking fact was the high incidence in these camps of neurological manifestations associated with deficiency of factors in

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the B complex of vitamins. Another important food deficiency state is liver damage leading to liver cirrhosis. Considerable attention is now being given in East and South Africa to this condition which may prove to be the most common of all deficiency diseases among ill-nourished populations in the tropics and the East.

There are various ways by which the nutritive value of rice as eaten can be improved, such as the use of lightly milled rice, parboiled rice, converted rice, or "enriched" rice in place of highly milled "raw" rice. Milled parboiled rice contains more thiamine and other nutrients than milled raw rice, and is not depleted of nutrients to the same extent by washing. However, it is usually not liked by people accustomed to raw milled rice, because of difference in color, flavor and consistency of the cooked product. Further, parboiled rice, is often unattractive in appearance and taste. So called "converted" rice is essentially similar to parboiled in its nutritive properties; "conversion" is in fact parboiling technically perfected, modernized and protected by patents.

Whatever the kind of rice eaten, typical rice diets are defective because they contain too much rice. The replacement of highly-milled rice by rice in other forms may prevent thiamine deficiency and help correct other deficiencies, but it will not make a diet in which rice supplies over 70 percent of total calories a good diet. More than this is needed. A greater consumption of

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foods of animal origin, milk, meat, eggs and fish, would effectively improve nutrition in rice-eating countries.

Rice-eating areas are in general areas of dense population. Available land must be devoted almost entirely to the production of high yielding crops, notably rice, in order to provide sufficient calories to prevent hunger. The diversion of land now producing food to fodder crops, or the feeding of vegetable foods suitable for human consumption to animals, would mean a reduction in the calories available for human beings.

Apart from the question of production, rice-eaters are in general too poor to buy animal products in sufficient quantities. A large increase in supplies of milk, meat and eggs, could be brought about only by a general rise in the standard of living and purchasing power, associated with far reaching developments in agriculture and industry.

WORLD HEALTH ORGANIZATION'S CONSTITUTION RATIFIED BY FIVE MORE NATIONS

During the past month or so five more nations, Brazil, Bulgaria, France, Rumania and the United States of America, officially accepted the constitution of the World Health Organization. This makes a total of 43 countries which have formally joined WHO, including 33 UN members and 10 non-members.

Despite the issue-raising qualification imposed by Congress that the U. S. should have the right to withdraw from WHO on a year's notice, the U. S. press and leading professional and civic bodies, including the American Medical Association, have been outspoken in their approval of full participation by the United States.

Dr. Brock Chisholm, executive secretary of the Interim Commission said recently that the World Health Organization is based on the concept that more is required than an international system of defense against communicable diseases. "It was also necessary," according to Dr. Chisholm, "that a positive attempt should be made on a world scale to apply all the resources of the health sciences for the attainment by all peoples of the highest possible level of health.

"For the first time in history a plan is provided by the constitution of the WHO for the establishment of a single health organization covering all aspects of health."

Concentration will be forwarded during the year on four main international programs, malaria, maternal and child health, tuberculosis and venereal diseases, in addition to suggested activity for 1949 in forty-four other medical, medico-social and related fields.

Other items on the proposed agenda are recommendations on administration and finance; location of the permanent headquarters of the WHO; legal questions; relations with the United Nations specialized agencies and non-governmental organizations; and the election of a Director-General.

A high priority, as previously stated is therefore recommended for an international malaria control program. Such a program would make it possible, through the coordinated use of the new insecticides, drugs and techniques, to control the disease and, perhaps, eventually eliminate it.

The program, presented to the Assembly calls

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A streamlined, "Pushbutton"-type Centralinear vertical control has been perfected for 200 ma x-ray equipment by General Electric X-Ray Corp. of Milwaukee, Wis.

Outstanding feature of the control is a "mechanical-brain" milliamperage selector, which reduces by 50 percent the number of movements required to make a radiographic exposure.

Versatility is also a major feature, as illustrated by the fact that it may be adapted to radiography, fluoroscopy, superficial therapy, spot-film radiography and photo-roentgenography (including angiocardiography).

Pressing the milliamperage selector button relieves the technician of five other operations: 1. selecting the proper tube, 2. selecting the desired focal spot, 3. setting the ma value, 4. choosing the milliameter scale, and 5. connecting the timer.

Another outstanding feature of the control is the accessibility of its interior mechanism through a front-opening panel, thus making it possible to service the unit quickly, without having to move it and cause costly shut-downs. Backlighting of the dials on the control reduces glare and shadow.

Winthrop-Stearns Have New Dispensers For pHisoderm

A new special metal and glass wall dispenser for hospitals and a plastic wall fixture for holding the 3 ounce hand dispenser of pHisoderm (Fysoderm), the modern soapless sudsing skin detergent, are now available through retail druggists or direct from the commercial department, Winthrop-Stearns Inc.

The hospital dispenser with 10-ounce glass container is being offered at the fair trade minimum price of $5, while the plastic holder for home or professional office use for physicians and dentists, is priced at $2.10 fair trade.

The company is now able to meet trade demands for pHisoderm in the three different types, namely for oily skin, average skin, and dry skin, in 2-ounce 8-ounce and gallon bottles and in 3-ounce refillable hand dispensers.

Benzebar Effective In Depressive States

Benzebar, a logical combination of benzedrine sulfate and phenobarbital has been introduced by Smith, Kline & French Laboratories. The formula of each benzebar tablet contains: Benzedrine sulfate (racemic amphetamine sulfate, S. K. F.), 5 mg. (1/3 gr.); and phenobarbital, 1/4 gr. (16 mg.) and is effective for depressive states accompanied by anxiety or agitation.

With benzebar the improvement of mood characteristic of benzedrine sulfate and the mild sedation of phenobarbital combine to restore the patient's normal outlook and his emotional equilibrium. The physician should be guided by the fact that each tablet contains benzedrine sulfate, 5 mg. Suggested dosage is 2 to 4 tablets daily, one-half the dosage on arising, and the other half before noon.

Benzebar should not be used in patients hypersensitive to ephedrine-like compounds, or in cases of coronary disease or other cardiac conditions in which casoconstrictors are contraindicated. It should not be used in the presence of hypertension, except with caution. These tablets come in bottles of 25.

Improved New Antithistaminic Drug Successful For Allergic Patients

An entirely new chemical substance for the rapid relief of allergic states has been announced by Schering and bears the name of Trimeton. It is a brand of prophenpyridamine and is spectacularly effective clinically in approximately half the dosages employed with older antihistaminics. The troublesome side reactions common to all antihistaminics are at a new minimum in incidence and severity with the employment of trimeton.

It has been reported that trimeton has repeatedly been demonstrated to produce therapeutic effects in allergic patients who did not respond to other antihistaminic compounds. Now available for prescription by the medical profession, trimeton is packaged in bottles of 100 and 1000 scored tablets, each one containing 25 mg. of the chemically pure prophenpyridamine.

Grant Adds Des To Synthetic Estrogen Line

Des has been forwarded by Grant Chemical Company, Inc., as its newest development in the field of synthetic estrogens for specific use as a treatment for as well as an aid in the prevention of: Threatened abortion, habitual abortion, miscarriage and premature labor.

Des, (Grant process alpha-alpha-diethyl-4, 4-stilbenediol) is a pure white quadrisected hexagonal 25.0 milligram tablet of diethylstilbestrol, U. S. P. Recommended for treatment as well as for prevention of loss of pregnancy in any of the trimester periods, des tablets therapeutic efficacy is based on the tremendously important clinical work of Karnaky of the Jefferson Davis Hospital, Houston; Rosenblum, of the Cedars of Lebanon Hospital, Los Angeles, and White, Smith and Smith of the Boston Lying-in Hospital who believe that the majority of cases of loss of pregnancy in any trimester period

may be due to a primary lack of endocrine support to the fetus.

The chief factor is the lack resulting from a greatly decreased steriod hormone titre in the maternal circulation. Endocrinopathies such as these respond readily to treatment with massive doses of the newer synthetic estrogen substances.

The suggested doses of des for use in abortion, miscarriage and premature labor are considerably higher than those that are used for ordinary therapeutic purposes.

Physicians will find that it is extremely well tolerated by the pregnant woman. It is reported that it alleviates a nausea condition. Repeated clinical investigations have proven beyond doubt that the pregnant woman has a dosage tolerance of 1000 times that of the nonpregnant woman. Therefore it is advisable to use des in doses sufficiently large enough to be therapeutically effective rather than to use low potency steroid hormones, or the smaller dose amounts of synthetic estrogens which may not give the desired result.

Des is available on prescription at any ethical pharmacy in bottles of 100 hexagon pure-white tablets. The tablets are quadri-sected for ease in graduating fractional doses for treatment in condition of abortion. They are also packaged in bottles of 500 and 1000 tablets for hospital use.

Micro Pulverized Intact Protein Now Made Available By National Drug Company

Protinal Powder, a micro pulverized intact protein-carbohydrate preparation for oral protein therapy, was put out recently by The National Drug Company. This new preparation, which mixes readily with water, milk, puddings, batter and other foods, tastes more like a confection than a pharmaceutical preparation.

It is delicately sweetened, and is available in both chocolate and vanillin flavor. Far superior to ordinary granule preparations, Protinal Powder does not have to be chewed, and is rapidly and completely digested.

The recommended daily dose of two tablespoonfuls four times daily supplies 70 Gm. of 100 percent digestible protein—equal to the average daily allowance recommended by the National Research Council. It contains all of the amino acids necessary to maintain life and growth, plus a suitable amount of carbohydrate calculated to spare the protein content for building purposes.

Except for its micro pulverized consistency, Protinal Powder is identical to Protinal Granules, which The National Drug Company introduced in 1946, and which has since been heavily prescribed to insure an adequate protein intake during pregnancy, lactation, convalescence, and other conditions in which protein requirements are substantially increased.

Transpulmin—New Standard Pharmaceutical Product

Transpulmin is for intramuscular use in the therapy of bronchitis and similar respiratory conditions and is particularly valuable as an adjuvant to penicillin therapy. This Standard Pharmaceutical product is a 3 percent solution of basic quinine, in volatile oils, with 2½ percent camphor, for intramuscular injection. When administered the active principles attain an effective concentration in the lungs, and exert expectorant effects before they are gradually eliminated by the expiration of the body.

It has been found effective in acute and chronic bronchitis and as a prophylactic against pulmonary complications in influenza and other upper respiratory and sinus conditions.

Transpulmin is supplied in boxes containing 1 cc. ampuls, boxes of 6 and 100; in 2 cc. ampuls, boxes of 6 and 100; and in 30 cc. vials.

New Synthetic Analgesic Nationally Released

The national release of Methadon Hydrochloride Amidone Hydrochloride, a new synthetic analgesic agent superior to morphine, was announced by Sharp & Dohme, Inc.

The administration of Methadon Hydrochloride produces effective analgesia with little or no effect on heart rate or respiratory and only a slight drop in blood pressure. In contrast to morphine, there appears to be little or no development of tolerance to the analgesic action of the drug.

Methadon Hydrochloride is 2-dimethylamino-4, 4-diphenyl-5-heptanone hydrochloride and was developed by German chemists during the war.

The analgesic effect of this product has been demonstrated in osseous and preoperative and postoperative pain, as well as in pain associated with malignant disease. The drug also is indicated for suppression of cough following surgery and cough associated with respiratory diseases.

For the relief of pain, the oral or parenteral administration of from 2.5 mg. to 10.0 mg. of Methadon Hydrochloride may be expected in general to give effective analgesia.

For suppression of cough, 2.5 mg. may be required orally or parenterally every three to four hours.

Following the use of Methadon Hydrochloride in therapeutic doses, nausea, vomiting, and respiratory depression occur less frequently than following the use of morphine.

Methadon Hydrochloride Amidone Hydrochloride, Sharp & Dohme, is supplied in 2.5 mg. and 5.0 mg. tablets, for oral administration, in bottles of 100 and 1,000, and it is subject to the provisions of the Harrison Narcotic Act.

for scientific investigations; expert advice on control of malaria; fellowships and visiting experts; teams and individuals to demonstrate malaria control techniques; and expert advice on education of the public. On the international plane the program envisages (1) increased production of insecticides and therapeutic agents and improvement of their distribution, (2) collection and distribution of technical information, (3) development of international regulations, (4) co-operation with other organizations in the field, and (5) participation in relevant congresses and conferences.

The proposed WHO program for 1949 in the field of maternity and child health aims at reducing the large number of preventable deaths among infants and mothers and controlling the high incidence of communicable and other preventable diseases among children. Governments would be assisted to develop facilities and services for adequate maternity care and to give infants the best possible chance of survival through normal physical development, mental and emotional health, and freedom from preventable disease. To help achieve these aims it is proposed that the following studies be initiated in 1949: causes and methods of reducing maternal, infant and childhood morbidity and mortality; child guidance and the mental health of children; and the social aspects of the problem.

As a first step toward activating the program, a maternal and child health section has just been established to provide the machinery for the international exchange of information on all subjects bearing on the health of mother and child.

Another field in which the Interim Commission proposed priority attention in 1949 is venereal diseases. Here too the war and post-war period have aggravated an already difficult problem. Increase of incidence of venereal diseases because of the war, deterioration of control measures in the post-war period and speedy international travel are among the factors that make an international control program imperative. Added reasons given by the Interim Commission are the record of effective international cooperation in this field and the availability of new techniques and therapeutic agents, not yet fully exploited.

The recommended plan, which places special emphasis on syphilis, will give governments assistance in national and local control based on modern scientific measures; will promote widest and most effective use of the new drugs; and improved techniques of control between nations.

Health Education Institutes Inaugurated By NYU

The first of the Health Education Institutes under the sponsorship of the School of Education, New York University, was in session August 16 to September 3. These courses were under the Department of Physical Education and Health, School of Education, in cooperation with American Association for the Advancement of Science, the Research Council on Problem of Alcohol and other national agencies, devoted to problems in alcohol education. The demand for this particular institute was so great that four large number of students—school administrators and teachers, social workers and religious leaders, and medical and public-health workers, applied for admission.

Professor Morey R. Fields, the Institute's coordinator stated, "The recognition by New York University of the importance of the problems of alcohol is another of the many undertakings evidenced in recent years that the solution of the problems of four million neglected people in the United States and many more million of their friends, family and associates can be achieved only through adequate undertaking of their problems." Dr. Fields stated that, "This Institute, one of the first of its kind to be established in a school of education and a large university, is the first major recognition of education's responsibility towards a more complete understanding of the problems of alcohol."

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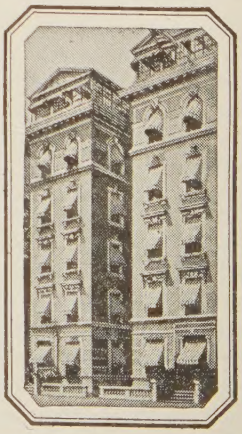

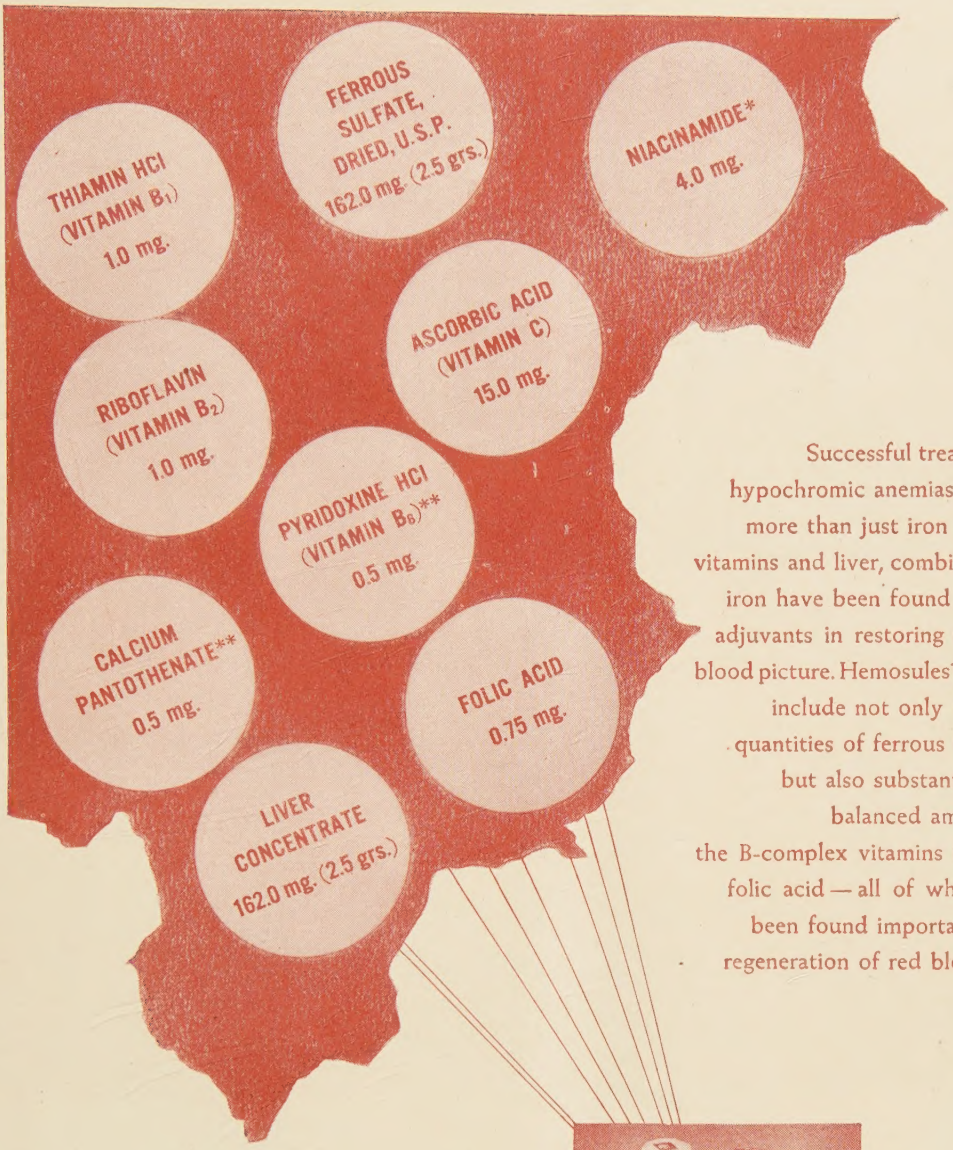
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